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THE BRITISH NAVY.

VOL. IV.

LONDON : PRINTED BY
SPOTTISWOODE AND CO., NEW-STREET SQUARE
AND PARLIAMENT STREET

THE BRITISH NAVY:

*ITS STRENGTH, RESOURCES, AND
ADMINISTRATION.*

BY

SIR THOMAS BRASSEY, K.C.B., M.P., M.A.

AUTHOR OF 'WORK AND WAGES'
'LECTURES ON THE LABOUR QUESTION' 'FOREIGN WORK AND ENGLISH WAGES'
AND 'BRITISH SEAMEN.'

VOLUME IV.

PART IV.

DOCKYARDS, RESERVES, TRAINING, PENSIONS.

BEING A REPRINT OF

*PARLIAMENTARY SPEECHES, LETTERS, PAPERS
AND ADDRESSES, WITH ADDITIONS.*



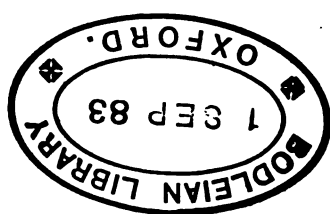
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PREFACE

TO

THE FOURTH VOLUME.

THE PRESENT VOLUME is a reprint of naval publications on a variety of subjects, and extending over a long series of years. The collection is necessarily disjointed and fragmentary. Each speech or pamphlet was prepared for a special occasion, and, where it was sought to gain the approval of the Navy and of Parliament to more or less novel proposals, repetition of statement and argument was inevitable. It is hoped that the statistics, facts, and opinions which are here brought together may be useful to those interested in questions of naval administration.

Many of the subjects dealt with in this volume have been already disposed of in a satisfactory manner. The Controller of the Navy has the invaluable aid of Mr. Barnes. The position of the professional officers has been the subject of a recent inquiry by a departmental committee. The first and second classes of the Naval Reserve have been effectively organised. A beginning has been made in the enrolment of

a Colonial Naval Reserve both in Canada and Australia. The constitution of the Royal Naval Artillery Volunteers is still under consideration. Other questions are less advanced. The training system is not yet perfected, but this important subject can never cease to engage the attention of the Admiralty, the constant changes in the methods of naval warfare involving corresponding modifications in the training of the Navy.

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CONTROLLERSHIP OF THE NAVY.

SPEECHES DELIVERED IN PARLIAMENT,

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Parliamentary Papers. References to salaries are omitted.*

SPEECH DELIVERED ON THE CONTROLLERSHIP OF THE NAVY.

April 27, 1871.

Sir T.
Brassey.
April 27,
1871.

Compara-
tive cost of
dockyard
work and
ships built
by con-
tract.

MR. BRASSEY, in rising to call attention to the multifarious duties of the Controller of the Navy, and to move a resolution on the subject, said, the attention of the public had been drawn to this office of late, from a combination of circumstances. An impression had prevailed that dockyard work was unnecessarily costly, and exaggerated statements were frequently put forward as to the cost of the vessels built in the public yards. If the ships built by the contractors were constructed at a loss to the builders, the argument against dockyard management, founded on a comparison with the assumed cost of contract work, fell to the ground. In point of fact, heavy losses were sustained on the contracts for the earlier ironclad ships. The table prepared by Mr. Reed, giving the cost of all contract built and Government-built broadside ships, up to January, 1868, gave the following comparison of actual outlay on labour and materials for the hull alone, without percentage for general charges:—

<i>Contract-built.</i>		<i>Government-built.</i>	
Tons	Cost of hull	Tons	Cost of hull
49,931 . . .	£2,706,600	47,686 . . .	2,625,117
	(or £54 per ton)		(or £55 per ton)

In the case of the ‘Achilles,’ 6,121 tons, the cost of the hull was 375,473*l.*, and in that of the ‘Northumberland,’ 6,621 tons, the cost was 479,874*l.*

It was necessary that the Government should possess ample resources for building ships of war in the public dockyards. This was clearly established in the long experiences of the last great naval war. The prices per ton for line-of-battle ships, built by contract in the Thames, advanced from 17*·*5*l.* in 1771 to 20*l.* in 1795, 21*l.* in 1800, and 36*l.* in 1805. If there were no public establishments, the cost of naval construction in times of pressure would be increased in an inordinate degree, and fatal delays might take place in the completion of outfits and repairs.

In the debate on the Navy Estimates in 1864, Mr. Laird gave other reasons for the maintenance of the dockyards. It had, he observed, been said that the private dockyards would supply the necessary dock accommodation in time of war. This was, however, quite a mistake. Merchantmen rarely drew 22 feet of water. The great object was to limit their draught of water to 19 or 20 feet. But a large man-of-war seldom drew less than from 26 to 28 feet.

Mr. Laird,
M.P.
Necessity
for dock
accommo-
dation.

The argument for maintaining the dockyards in their full efficiency in time of peace, and making the most of the resources they contained, was ably stated in a memorandum addressed by the professional officers to the Controller in 1868. The opinion was expressed that, 'as the dockyards exist, their resources should be utilised as far as possible. If in the principal home yards shipbuilding were suppressed, the entire cost would be brought to bear on the secondary work of maintaining ships in ordinary, and refitting those in commission. The apparent cost of maintenance and repair would thus be enhanced to a monstrous extent. Dockyard economy ought to consist of something by which the public money is really saved; but this suppression of shipbuilding works in the dockyards would only add to the public outlay, by employing other establishments to perform those works which the existing establishments were equal to.'

Memoran-
dum of pro-
fessional
officers,
1868.

While the criticisms on dockyard extravagance were probably exaggerated, it was generally admitted that it was more costly by ten per cent. than similar work in private yards. It was a fair question whether the difference in cost was not fully made up in superior workmanship and durability; but while admitting the general success of our dockyard administration, there was reason to hope that some improvement might be effected. The vote for stores and wages in the home dockyards exceeded 1,500,000*l.* A saving of only five per cent. would amount to 75,000*l.*

Dockyard
10 per cent.
dearer than
contract
work.

It was patent to all who had in any way investigated the subject, that in the administration of those large dockyard establishments there was too much concentration of detail and management at Whitehall, and the fact that the Controller, who was responsible for the management of those establishments, was an over-worked officer, arose to a great extent from that excessive concentration of responsibility in London. At the last inquiry into the management of the dockyards, the Duke of Somerset stated that it was impossible for any person, however able, adequately and efficiently to discharge all the duties imposed at that time on the Controller.

Centralisa-
tion at
Whitehall.

Duke of
Somerset.

memorandum
of instructions
to the
controller.

The soundness of that opinion of the Duke of Somerset will be fully established by a perusal of the memorandum which he produced in his examination before the Commission on Dockyards, on June 19, 1860, and which it may be useful to insert with this reprint of the compiler's speech.

' Instructions for the Controller of the Navy.

' Your duties consist in the control of all expenditure incurred for the building, the repair, and the outfit of vessels in Her Majesty's Navy. These works, therefore, whether they be performed in the naval yards or by contract, are placed under your direction and management.

' For the discharge of these important duties you are invested with such authority as will enable you, by the exercise of due vigilance, to regulate the numerous sources of expenditure for which you are responsible to the Board of Admiralty.

' You are to control the various services in the dockyards, which may be briefly classed under the following heads :

' Ships building.

- „ converting.
- „ making good defects of and refitting.
- „ fitting for sea.
- „ fitting for steam ordinary.
- „ fitting for the divisions of reserve.
- „ maintaining in ordinary.

' Yard craft.

' Construction and repairs of steam machinery and boilers.

' You are authorised to correspond with the Superintendents of the dockyards, who in all matters connected with your department will communicate with you, and receive orders from you.

' You are to prepare and submit to their Lordships before the commencement of each financial year a programme of the works relating to your department to be performed within the year.

' This programme must show the actual state of the ships then building, and also the state to which you propose they should be advanced by the end of the financial year, with the number of men to be employed on each ship, and the probable cost.

' The programme should contain similar information in reference to ships to be converted within the year.

' You will submit to their Lordships your suggestions as to the number and proportion of the various artificers and labourers to be employed in the several departments of the dockyards and factories

under your control. You will regulate the numbers with reference to the vote for wages, and you will at all times recommend such alteration of the numbers employed, and such revision of expenditure as may best, in your opinion, contribute to the economy and efficiency of the dockyards.

‘ You will from time to time transmit a return of the names of those artificers and workmen who from age and infirmity are incapable of performing a proper day’s work, with a statement of their age and time of servitude.

‘ You are, as often as your other duties will permit, to visit the dockyards, in order to inspect the works in progress, and to ascertain that your directions are carried out with promptitude and economy.

‘ Any orders which you may wish to give to the Superintendent should be in writing.

‘ You are to recommend such measures as you may think fit for the preservation of ships in the several divisions of steam ordinary, and you will ascertain the condition of the vessels, of the machinery and boilers, so that you may be enabled accurately to inform their Lordships of the time in which these vessels could be ready for service. You will see that the timber used in the dockyards for the building and repair of vessels is suitable, and duly seasoned, and if you should see occasion you will call their Lordships’ attention to the quantity and quality of timber in store.

‘ You will carefully observe the quantity of timber, and of other stores employed in the works under your control, and immediately direct their Lordships’ notice to any defects in the supply, and to any waste in the expenditure.

‘ You will receive every month a scheme of works from the several dockyards, so that you may be able to watch the progress making in the approved programme, and have it in your power to modify the works whenever the alteration may be rendered necessary by the exigencies of the public service. A return is to be made from your office at the end of every three months, showing the general progress of work in the several dockyards, and the number of men employed.

‘ You will submit to their Lordships, when required, designs of vessels to be built either in the naval yards or by contract, as they may direct, and you will lay before them such details respecting the vessel, its estimated cost, the machinery, and the armament proposed, as may enable them to form a judgment in each case before they sanction the design. Whenever vessels, or machinery for vessels, or for dockyard purposes, are to be supplied by contract,

you are to submit to their Lordships the names of persons qualified to tender, with such further information as may be necessary.

‘The tenders are to be opened by you, and then submitted to their Lordships with your observations as to which may be most eligible for acceptance. When the tender has been accepted, you are to communicate with the person, and take steps for the due execution of the contract. While the work contracted for is in progress, you are to send an inspector as often as you think fit, who will report to you on the state of the work, and you will not give a certificate for the payment of any instalment until you are satisfied with the condition of the work, unless the circumstances of the case induce you to make a special submission to their Lordships.

‘The examination of candidates for Chief Engineers of the Royal Navy will be conducted in your office, and you will from time to time recommend for promotion to that rank, and to subordinate ranks, such Assistant Engineers as may possess the requisite qualifications. You will also regulate all other examinations of Assistant Engineers, and of candidates for entry into the engineer branch of Her Majesty’s Navy; and you will recommend the Chief and other Engineers for appointment to Her Majesty’s ships.

‘When vacancies occur in the dockyards, whether for the superior or inferior officers, if they are such as require to be filled up, you are, after consultation with the Superintendent of the yard, to submit the names of the several candidates, in accordance with the regulation promulgated on March 13, 1853.

‘The examinations of candidates for the situation of Master Shipwright’s Assistant will be conducted in your office, or in such manner as their Lordships may direct.

‘All other examinations which take place in the dockyard departments under your control will be forwarded to your office for submission to their Lordships, and you will assist to the best of your ability in rendering these examinations just towards the candidates, and beneficial to the public service.

‘You will, as heretofore, consult with the Senior Naval Lord upon all matters connected with the preparation of ships for commission, the repairs of ships in commission, the ships in the steam reserve, the state of work in the dockyards, and generally with the business of your office.

‘The foregoing instructions may not embrace the whole of your duties, but they will serve for your general guidance; and in the discharge of these duties, if you should at any time see the means of introducing improvements or measures calculated to promote

economy in any branch of Her Majesty's service connected with your department, it will be your special duty to submit it to the Board of Admiralty.'

The comprehensive character of the duties of the Controller was abundantly evident, and they had been materially increased by recent changes. The departments of gunnery and stores had been added to the former scope of his functions, already more than sufficiently onerous; and he had been made a member of the Board of Admiralty.

New duties
of Con-
troller.

While the Controller himself could not possibly discharge all the duties imposed upon him, the fact that he was nominally held responsible absolved those officers who had the actual charge of the detail of dockyard business from the wholesome responsibility which ought properly to rest upon them. He would suggest that the Controller should be relieved of a portion of his duties by giving a more independent authority to the local officers of the dockyards. He might attach undue importance to that suggestion; but if he represented any principle of administration in that House, it was the successful application of the principle of decentralisation to the largest industrial affairs.

Respon-
sibility of
dockyard
officers.

The Admiral Superintendent must be retained, because it was necessary to have in those establishments a naval officer of high rank to represent the Admiralty, to check the requisitions sent to the dockyards by the captains of ships, to superintend the steam reserve, and to see that every vessel fitted in those yards was duly equipped for naval service.

Admiral
Superin-
tendent.

This subject was ably discussed by the late Admiral Denman in support of his essay on 'Admiralty Administration':—

'No man exists who possesses the qualifications which would enable him to undertake the skilled management of all the branches of the *matériel* of the Navy, and neither the Constructor nor the Engineer would brook the superiority of the other, were either to fill the office of the Surveyor of the Navy.

'Admiralty
Adminis-
tration,' by
Admiral
the Hon.
Joseph
Denman.

'A naval officer filling the office would neither pretend to construct a ship nor to perform the duties of the Engineer-in-Chief, but he would have far greater knowledge of the various elements necessary to constitute an efficient ship of war under all the circumstances she may have to encounter, than either, for his whole life has been passed in the practical experience of the subject, and his professional credit and success has been bound up with it.

'The joint action of the seaman, the ship-builder, and the engineer, is secured by the superintendence of an Admiral over the several branches, which must be combined in harmonious action to

produce good results; it would be therefore difficult to improve the existing system in this respect.'

The same subject was ably discussed in a pamphlet on 'The Admiralty,' by a flag officer :—

'The Admiralty,'
by a Flag
Officer.

'There has been an intention to abolish the officer of Naval Superintendents of Dockyards, and this mischievous project may be revived. Should it be carried into effect in the great outfitting ports, the link will be wanting which has hitherto connected the dockyard with the fleet, and by means of which the incessant business in which both must co-operate has been so advantageously conducted. The result will be, that when some considerable pressure of work is thrust upon the dockyards, they will be in a state of utter confusion and insubordination. The Government expectations of progress in the work will on some emergency be disappointed, and the blame which should rest upon mischievous administrators will be heaped upon those who are the unhappy executives in disorganised departments. Whilst work is hindered and time lost in accusations mutually bandied between a frightened Government and indignant officers struggling to expedite an arrangement under an impracticable system, the enemy's fleet may be sweeping the Channel. The principle of having a naval chief in the dockyards had worked so well previously to Sir James Graham's administration and had produced such good results under the most trying conditions to which this country had ever been subjected, that he carried the principle still further, and for the Commissioner, who was a naval officer holding a civil office, he substituted a Superintendent, with his flag flying. The proposed scheme must have emanated from a brain wholly uninformed as to the necessities of the service.'

Duke of
Somerset,
1860.

During his examination before the Dockyard Commission of 1860, in reply to a question whether the Controller should be a naval officer, the Duke of Somerset replied :—'It would be a source of great inconvenience if you had a civilian at the head of the dockyards. You must have naval officers to communicate with captains who want things to be done for their ships. . . . If there were any yard in which you might have a civilian, it would be such a yard as Pembroke. There you would not have the same clashing with officers of the Navy as in other yards. I have not considered the subject with a view to appointing a civilian, nor do I know whom I should find qualified to carry out such a business.'

Speech of
Comptroller,
April 27,
1871.

His (Mr. Brassey's) proposition was that the shipbuilding work of the dockyards should be placed in the hands of a professional

officer, on whom there should rest an undivided responsibility in respect of those duties; and in order to secure the services of men fully competent to undertake that great responsibility, it would be necessary to improve their social status. It was the opinion of the most competent authorities that a promoted workman was not in all cases the fittest person for administrative functions, involving more or less general knowledge of a vast variety of trades, and that, in order to have the highest professional office in each dockyard well filled, they required the services of men who possessed not only a knowledge of workmanship but also an appreciation of finance.

The title of Master Shipwright was not much coveted by the persons employed in that capacity, nor was it quite suitable to the principal officer appointed to undertake the work of shipbuilding in one of Her Majesty's yards. The title of Naval Constructor would be more appropriate; and the relative rank of those officers should also be improved, as in France, where the officer at the head of the shipbuilding work in a dockyard held relative naval rank with a captain; and where the highest officer connected with shipbuilding held the rank of a rear-admiral. The Companionship of the Bath might likewise be given from time to time as a recognition of long and meritorious service on the part of those officers.

Relative rank in France.

Turning to the general subject of dockyard organisation, a valuable economical reform would be effected if the principal shipbuilding offices in each of the naval yards, before commencing to build a ship or undertake any important repairs, were called upon to furnish an estimate of the probable cost. Independent estimates from subordinate agents had been found of the greatest advantage in the execution of railway works. He would further suggest that the names of the officers by whom the several estimates were framed should be made known to Parliament, and that they should be held responsible for any serious discrepancy between the actual cost and the original estimate. If the dockyards were treated more completely than at present as separate establishments a most valuable incentive to efficiency and economy would be applied to those charged with their management.

Independent estimates from dockyards.

Turning to the question of promotion in the dockyard, the present system was very unsatisfactory.

Dockyard promotions.

In the debate in the House of Commons on the Navy Estimates for 1864, Lord Clarence Paget said, in reference to the report of the Royal Commission of 1861 on Dockyards:—

Lord Clarence Paget.

‘The Duke of Somerset repudiated the idea of allowing each chief officer of a department to appoint all the officers under him.

The appointment of the subordinate officers should rest with the responsible Minister. This, indeed, was one of the principal differences between the Royal Commissioners and the Admiralty.'

Sir
Baldwin
Walker.

The same views were expressed in the reply of Sir Baldwin Walker to the recommendation of Admiral Smart's Committee on the subject of the supervision of dockyards. 'No experienced practical person,' he said, 'can question that the good working of the dockyards must depend on the subordinate officers. The Committee, however, seem to consider that if the superior professional officers had more direct and personal power over their subordinate officers, proper results would be realised, or, if not, that such superior officers should be removed—not interfered with or controlled. In a great department like the Admiralty there must be gradations of authority. To give any individual officers in a dockyard direct and personal power over other officers to such an extent that if certain results were not realised that alone would justify their removal, is probably what the Board would never consent to. If they did, existing rules must be set aside, as well as the authority to the Surveyor and to the Superintendents.'

Lord
Clarence
Paget,
1863.

Precisely similar opinions were expressed in 1865 by Lord Clarence Paget, in his place in the House of Commons:—

'There is another circumstance connected with the dockyards which hon. gentlemen have overlooked when they talk of discharging persons who are not very competent. If a private individual has in his dockyard a man who does not suit him, he sends him about his business. I should like to know what would be said if, in our dockyards, we sent people about their business because they did not exactly suit us.'

A widely different view of the best system for regulating the promotion of workmen was conveyed in the memorandum of December 1864, submitted by Mr. Childers to the Duke of Somerset:—

Memoran-
dum. Mr.
Childers,
1864.

'Connected with the economical employment of labour were the reputed characters of the workmen. Every man who intelligently and actively exerts himself ought to be assured that his character for industry and ability does not depend upon casual reports, but that it becomes matter of record year by year of his service. The establishment book should be filled up with a report of character. The best record would be the confidence of foremen: the best incentive the knowledge that they have the power to promote.'

Speech of
Compiler,
April 27,
1871.

Even among some of the humblest grades of the artisan class promotions, he believed, were made, not directly by the local officer, but by reference to the central authority in London. That was

altogether wrong. The central authority must depend, in such cases, upon the report of the local officer, and the responsibility should rest with those who were personally acquainted with the claims and qualifications of the workmen. If that system were more fully adhered to, changes of the Government would be less prejudicial to the efficiency of the dockyards. Sir Baldwin Walker stated in evidence that, during the thirteen years he held office, no less than seven changes of administration had taken place.

Responsi-
bility
should rest
with dock-
yard staff.

The suggestions which he was now putting forward were approved and recommended by the Committee appointed in 1865 to consider the cost of articles manufactured in the dockyards. They reported that the difference between the Government departments and the private trade is that in the latter the directing agents are selected from any quarter in which the greatest aptitude may be found, and salaries are paid that attract as much ability as the concern can afford to retain. In the private trade labour is rendered productive to the utmost degree, ensuring cheapness of manufacture, even in combination with high rates of wages, by direct and discretionary supervision. The principle mainly relied upon in these establishments is that of active and intelligent personal responsibility.

Committee
of 1865 on
dockyard
manufac-
tures.

With reference to the accounts of expenditure, the system of decentralisation should be fully applied to the royal dockyards, and each dockyard should be treated as an independent establishment. By this means any great delay which existed at present in presenting to Parliament the audited accounts for ship-building would be avoided. The last accounts for 1867-68 were only submitted to the Accountant-General for his approval in November 1870, more than two years after the expenditure had taken place, and for the purpose of criticism they were useless.

Delay in
audit of
accounts.

The importance and the practicability of a prompt audit of accounts, were points fully recognised in the evidence given by Sir James Graham before the Select Committee of the House of Commons of 1861 on the Board of Admiralty.

Sir James
Graham,
1861.

‘I am assured,’ he said, ‘by Sir R. Bromley and Mr. Anderson, who are the highest living authorities with respect to accounts, that there is no difficulty in so framing accounts, on the principle of double-entry, that at once, year by year, Parliament may be told what has been spent in the building of any ship of war.’

‘If it shall appear that ships built in dockyards cost 35*l.* per ton, which, if built in merchants’ yards, would cost only 20*l.* per ton, the public will soon begin anxiously to enquire whether the difference is really justifiable.’

On more than one occasion attention had been directed to the delay in the publication of dockyard management and expense accounts. The critical use of such accounts is of little value after an interval of from three to four years has elapsed.

Speech of
Compiler,
April 27,
1871.

The accounts might be produced more speedily if they were audited locally. The audit of all accounts connected with his late father's great works was completed on the scene of operations.

Committee
on Admiralty
moneys,
1865.

The Committee of the House of Commons of 1865 on Admiralty Moneys and Accounts examined Sir Spencer Robinson at considerable length on the subject of dockyard accounts. His views were conveyed in the replies to questions, from which the following extracts are taken :—

‘The system, which I think we should at any rate try, in order to see whether it would work, is that of completely separating each dockyard from another, and of submitting the Navy Estimates in a radically changed form.

‘You, in fact, would present to Parliament the whole of the expenditure at each place, as if it were the sole establishment of the Commissioners for the Navy?

‘I think that it ought to be so managed as to keep every dockyard entirely separate. The new system would be beginning with the dockyard and coming to the Admiralty merely for comparison and check and observation?—Yes; I think that this question tends very much to pointing out that the restriction to centralisation is rather advisable in these matters than not, and I quite think so.’

The great object of administration, in a manufacturing business, is to obtain the best results from the labour employed. The supervision of the labour is, after all, the vital part, and for this we must look, not to the Accountant, but to the shipwright and professional officers.

Observations by
Committee
on dock-
yard manu-
facturing
accounts,
1865.

The Report of the Committee of 1865 on Dockyard Manufacturing and Expense Accounts contains the following observations on the same subject :—

‘We satisfied ourselves that, either locally or centrally, an examination, sufficiently independent to be satisfactory, is applied to every class of payment made on account of the naval service.

‘But our attention was called, especially, to the system of local audit applied to the payment of wages at the naval establishments ashore. We found that these payments were not subjected to any detailed examination at the central office; and, accordingly, we visited Chatham Dockyard, Devonport Dockyard, the Marine Barracks and Victualling Establishments at Plymouth, with a view of ascer-

taining how far this system of local audit could be relied upon. We came to the conclusion that there was a sufficiently independent check at these establishments to prevent any unreal or unauthorised payment being charged in the accounts; and that, having regard to the nature of the expenditure, the local check, which was concurrent with the payment, was infinitely preferable to a postponed check at the central office. . .

‘The particularity of record characterising the dockyard system of accounts is not observed in the private trade or in public companies. In the case of the latter, general confidence in the management saves much book-keeping. If a private firm is satisfied with the results of manufacture through the conclusive test of profit, nothing more is required. . . . If the country found that the ships built in the dockyards were produced as cheaply as they could be built elsewhere, Parliament and taxpayers would be well satisfied. . .

‘The Committee considered that prompt transmission and weekly accounts of expenditure for labour were of primary importance.

‘With regard to dockyard accounts generally, they should, so far as they extend, be rendered with a fulness that will be satisfactory without an elaboration that would be excessive.’

The mode in which the dockyard accounts are now prepared was explained to Parliament in 1864 by Mr. Stansfeld, who had been specially commissioned to prepare a system of dockyard accounts.

Mr. Stansfeld, 1864.

The first account to which he would refer was the expense account, compiled from the workmanship sheets of labour and the notes for stores. These sheets were kept by the inspectors of the dockyards, and were compared by the accountants of the yards with the payment of wages by the accountants. They were posted to the ships by the audit-clerks. The stores were valued according to the store-keeper's rate-book, and posted by the audit-clerks.

The efforts of Mr. Stansfeld, Mr. Childers, and Mr. Seely, have resulted in establishing for the Navy a perfect system in matter of account. The *Globe* newspaper, in an article published in July, 1876, describes, in not exaggerated terms of praise, the returns now supplied by the Admiralty to Parliament:—

‘We have lately received the most remarkable and most useful of all the returns presented by the Board of Admiralty to Parliament. The shipbuilding accounts of the Navy are unique, and we can only wish for a time when such elaborate and exhaustive information as they contain may be furnished by every department under the Crown. All other departments are content with merely laying before the country what may be called their banker's book; they show us

the sums placed to their credit in the shape of grants from the House of Commons, and they show the cheques they draw against these amounts in the shape of an appropriation account or an account of surplus and deficiencies. But what value the country gets for the money thus expended never appears, unless a special return relating to a particular item of expenditure is called for by some over-curious private member. The Admiralty, on the contrary, shows in its expense accounts precisely how much is spent on every ship of the Navy, whether the amount is for building or repairing, whether it is for the ship, or the engines, or the stores required for equipping it for sea service. Not only this, but it gives exactly the value of stores in hand at each naval yard, the depreciation of stock by keeping or by conversion, the income and capital of each yard, the expenses incurred in conversions and manufactures, and a hundred other things which are useful to members of Parliament and their constituents in arriving at a fair estimate of the value they receive for the money they spend. And yet this is not all; the Admiralty expense accounts do more, for they enable us year by year to get a complete history of every ship in the Navy, whether in commission or reserve, if only some money is spent upon them. They show us what ships are being built, what are prepared for service, what are kept in commission, what are maintained in reserve in a state of efficiency, and, lastly, what are broken up. They form, in fact, for the *dilettante* economist, a complete *vade mecum*, and furnish to the inquiring taxpayer, as regards shipbuilding expenditure, a conclusive answer to the question how the money goes.'

Shipbuilding transactions,
1878-9.

The present Accountant-General has laboured diligently to make the record of expenditure more concise, without omitting any details which are essential. He supplies an explanatory preface to the numerous tabular statements previously issued, and he has furnished the means of instituting a correct comparison between the work proposed to be done in the way of shipbuilding and repairs, and the amount actually accomplished in the dockyards. He has effected a not less important improvement in the promptitude with which the returns are now published. The Parliamentary account of shipbuilding transactions in 1878-79 was presented to Parliament in May, 1880.

M. Lamy.

M. Lamy, a distinguished naval critic, in a speech delivered in the French Assembly in 1878, was able to point to the system of accounts established in our own country as a model for imitation by the French authorities. In England, he said, everything was determined beforehand, with regard to the cost of repairs. The

number of workmen to be employed is strictly ascertained, and the account of expenditure is scrupulously examined at the beginning. English administrators are convinced that repairs, unless carefully controlled, are a fruitful source of extravagant expenditure. An exact account is kept of the materials worked up in the construction and repair of ships. Vouchers are required for every item, and a minute control is maintained. The very moderate expenditure of the English naval administrators on the *matériel* of their fleet is due to this careful supervision. The large expenditure on the repair and fitting-out of ships in France is attributed by M. Lamy to the want of clearness in their system of accounts. He entertained no doubt that with that supervision those services would be less costly to the public purse; and that millions of francs, now absorbed annually in repairs, might, under a better system, be devoted to the construction of new ships.

The staff of the Controller must be in all respects efficient, and sufficiently numerous to enable the Admiralty officials to make more frequent visits than hitherto to the Royal Dockyards. No supervision at Whitehall could be so effective as personal inspection. The master's eye did more in accelerating the despatch and improving the quality of the work, than the most voluminous correspondence and the most intricate returns.

Speech of
Compiler,
April 27,
1871.

In support of the preceding observations, taken from the speech of the Compiler, the evidence given by the Duke of Somerset and Sir Baldwin Walker, before the Committee of 1860, may be appropriately quoted. The Duke of Somerset believed that for the proper efficiency of the dockyards it was necessary that they should be more frequently visited by the Controller. When he had visited the dockyards with the Controller, on one or two occasions, it did appear that things had been done of which he had not been informed, and that expenditure had been incurred without his knowledge.

Duke of
Somerset,
1860.

We have the same views expressed by Admiral Jurien de la Gravière, who has repeatedly observed that the Minister of Marine should be a frequent personal visitor to the ports. The attempt to carry on the business of the dockyards by telegraph is, as he truly says, the very worst plan possible.

Admiral
Jurien
de la
Gravière.

SPEECH IN COMMITTEE OF SUPPLY ON NAVAL
ESTIMATES.

July 15, 1872.

Reprinted from 'Hansard.'

Hansard,
July 15,
1872.

MR. BRASSEY : In his interesting speech, the noble Lord who has just sat down (Lord Henry Lennox) has severely criticised the appointment of a Surveyor of Dockyards. If the relations between that officer and the Controller of the Navy were intended to be such as the noble Lord has described, the expediency of the appointment would be extremely doubtful ; but if the duties of a Surveyor of Dockyards are laid down with judgment, he would be able to render valuable service. If a comparison be made between the constitution of the Admiralty and a commercial establishment charged with the control of a business of equal extent, the cost of the Admiralty Office bears an exaggerated proportion to the amount of business which it conducts. Yet, notwithstanding the large amount of the expenditure, the Department seems to be weak in its administrative power, while the clerical staff is unnecessarily large. Facility for the tabulation of returns and records will not secure good administration. It was well observed by my right hon. friend (Mr. Childers), in the course of his examination before the 'Megæra' Commission, that, 'No mechanism which the thought of man can devise will be perfect, unless those who have to work it do work it thoroughly. If somebody neglects his duty, there is no system of duplication or triplication which will effectually detect it in all cases. Responsibility is the keystone of good administration.'

The higher officers of the Admiralty are overworked ; but if you want to relieve them of some portion of their burden, you must employ as their assistants persons of high qualifications, and with that technical knowledge without which the management of a manufacturing business cannot be successfully conducted. In his examination before the 'Megæra' Commission, Sir Spencer Robinson

quoted a passage from a memorandum addressed to the Admiralty in January 1861, in which the necessity for such assistance is strongly urged. Having explained the increase of work, he did not propose to their Lordships any increase in the number of clerks, but he did most earnestly submit for their consideration that the proportion of superior clerks should be increased. To the same effect, in another portion of his evidence, he said that each department of the Admiralty should have a secretary, who should be under the general superintendence of the Chief Secretary: 'As to each of the departments,' said Sir Spencer Robinson, 'I can say confidently that the want of a secretary almost kills us, it wears us to death.' The cry of despair, which was uttered by the late Controller of the Navy, has been sent forth before by many an exhausted official.

The redundancy of clerical, the deficiency of administrative power, which may be observed in every department under Government, have been criticised by all who have examined the constitution of the public departments in a comprehensive and philosophical spirit. In an able article in the *Quarterly Review* for July 1869, three principal reforms are described as being urgently required in every branch of the public service—greater concentration, fewer clerks, and higher pay. The reviewer very judiciously urges that while the clerks for the mechanical duties should be chosen from a class which could aspire to high posts, the other class should consist of young men trained by the best education England can afford, desirous of a somewhat easier and surer life than the struggles of the Bar offer, preferring administrative work, or conscious of administrative ability. In endeavouring to strengthen their constructive staff, the Admiralty are pursuing a most judicious course. The appointment of a Surveyor of Dockyards, as a medium of communication between the Controller of the Navy and those establishments, should be the means of considerably reducing the too voluminous correspondence between Whitehall and the naval yards. The cumbrous nature of the present system cannot be appreciated without a few figures. Sir Baldwin Walker informed the Committee on the Management of Dockyards in 1860, that in the Surveyor's Department in 1834 the number of letters amounted to 3,698 with four clerks, in 1848 to 6,758 with seven, in 1850—when the Steam Department was transferred to the Surveyor of the Navy—to 10,650 with 11; in 1854 to 22,259 with 11; in 1856—the period of the Russian War—to 32,178 with 16; and in 1859, to 36,296 with 16. Sir Spencer Robinson has recently made a statement to the 'Megæra' Commission showing how the correspondence had steadily increased in recent years. He said that in

1863 the number of letters in his department was 60,000, and the number of clerks 29; while in 1870 the letters were 70,000 with 30 clerks. That such an increase should be allowed in the correspondence is conclusive evidence that the system of concentrating the management of the dockyards in the office of the Controller in London had been carried too far. By the appointment of a Surveyor of Dockyards the immense mass of correspondence now conducted by the Controller may be diminished and a very valuable reform effected.

The Controller will be enabled to pay more frequent personal visits to the dockyards, and all who have had experience in administration know that the presence of the master's eye will infuse a vigour into the work which is being carried on, such as cannot be secured by any other means. The necessity for strengthening the department of the Controller with an additional professional officer, holding a high and confidential position, has been recognised by many high authorities. Admiral Smart's Committee on the Management of the Dockyards, which was appointed in 1859, stated in their report that they were of opinion that if the dockyards were frequently visited by a practical shipwright, and a practical engineer officer, representing the Surveyor of the Navy, it would be attended by many beneficial results. Better judgments would be formed of the persons most fit for the promotions which are constantly occurring in the different grades.

The energies of the officers, from the principal officers downwards, would be more advantageously drawn forth. In 1861, in his evidence before the Committee of the Board of Admiralty, the Duke of Somerset said that the Controller, being at Whitehall, could not really know sufficiently well what was going on in those various distant dockyards, and had not the means of sending some one frequently enough to ascertain. In consequence, he had attached to the department of the Controller another shipwright officer to assist in those inquiries. In view of these recommendations, I trust that the motion of the noble Lord may not be carried. I myself most anxiously desire to see an officer of the rank of Deputy Controller at the head of every yard; but even when we have improved both the position and the pay of the principal shipwright officers, an additional inspecting officer on the staff of the Controller is equally necessary. For his wise decision to increase the administrative power of the Constructive Department of the Admiralty, and to substitute for a redundant correspondence a more effectual system of supervision by personal observation and control, the First Lord of the Admiralty deserves the warm commendation of this House.

SUBDIVISION OF LABOUR AT THE ADMIRALTY.

To the Editor of the 'Times.'

SIR,—In his recent disclosures to the 'Megæra' Commission the Secretary of the Admiralty has partially drawn aside the veil of official reticence, and has seriously alarmed the public by his revelations. In a time of acknowledged difficulty, it is conceivable that suggestions for the improved management of the dockyards, even though they come from an independent source, may not be inopportune. *Times, Feb. 2, 1872.*

For upwards of a quarter of a century, from the table at which I am writing, my father directed, with truly marvellous facility, the labours of a body of workmen often six times as numerous as the artisans employed in the dockyards, and engaged on engineering works of the greatest magnitude in every quarter of the globe. The system he adopted, although simple, was yet so efficient that he never failed to bring a contract to a successful termination. The salient feature of his system was decentralisation. With keen vigilance he watched the progress of the most distant operations, but he rarely interfered in the details of management.

The Admiralty regulations for the management of the dockyards are so combined as to concentrate authority to the utmost degree in the hands of the officials at Whitehall. My father's main object, on the contrary, was to fix the responsibility of management on his local representatives. Wisely recognising the limits imposed, by the remoteness of the scenes of operations, upon his powers of personal superintendence, he directed his attention generally to the selection of a well-qualified lieutenant. The choice once made, his most anxious care was given to strengthen his subordinate's position, and to invest him with the magical influence which the master's eye, to whatever quarter it is directed, will always exercise.

Not without diffidence, these details are presented to the public, in the belief that a close analogy exists between the business of

dockyard administration and that of the large contractor for engineering works. In both cases the scene of operations is beyond the ken of the central authority. In both, many questions arise which cannot be dealt with so effectually at head-quarters as on the spot. For shipbuilding, as in the construction of the railway, the original design, the approval of the estimate of cost, and the supervision of the works, are the special functions of the engineer, while the organising of the labour, and the economy in the use of materials, are the province of the contractor. Efficiency is thus the primary object of the engineer, as economy is the primary object of the contractor. A like subdivision of responsibility should be established in the dockyards.

In imitation of the subdivision of labour which has been adopted with excellent results in the construction of railways, I would suggest that the Controller should no longer be regarded as the shipbuilder of the Navy, and that he should in future confine his attention to that portion of his present duties which properly comes within the sphere of the naval architect. He should be represented in each dockyard by a highly qualified naval architect, bearing the title of Deputy Controller, who should be responsible for the supervision of the work in progress. All that belongs to the department of the shipbuilder, as distinguished from the naval architect, should be placed in the hands of the master shipwrights of the dockyards.

The Controller, in truth, is an overworked officer. He is responsible for the designs and equipments of ships in construction, for the maintenance of ships in reserve, and the repairs of ships in commission. It is a mistake to add to this immense mass of work the internal management of each dockyard. As the engineer is to the contractor for the railway, so the Controller should be to the principal professional officer in each dockyard.

Before any new work is begun, an estimate of the cost of building or repairing a ship, according to the plans approved by the Controller, should be obtained from the dockyard where it is proposed that the work should be done. This estimate should be most carefully scrutinised by the Controller, and modified where necessary. The modifications, unless a special protest be made, should be considered as having been accepted by the dockyard officers, who would be responsible for any excess of cost beyond the revised estimate. This suggestion is borrowed from the practice of contractors for public works, whose preliminary estimates are generally made by the member of their staff who, if his tender be accepted, would be entrusted with the immediate supervision of the contract.

Under the system suggested, Parliament would no longer be asked to vote a certain number of men to be employed in the dockyards, thereby most unwisely interfering with the discretion of those who alone are competent to determine the amount of labour required. Parliament, instead of voting a fixed number of men, should vote the supplies necessary according to the estimate of the Controller for carrying out a definite amount of work. We now say there shall be so many men, and we assume, though it by no means follows, that we may therefore reckon on the completion of the programme of work within the financial year.

The Admiralty interfere far too much in the details of dockyard management. They determine the number of artificers to be employed and the work on which every man is to be engaged. All promotions, even among the humblest grades of artisans, require their sanction. Every day's work in a dockyard depends more or less upon the directions received by the morning's mail from Whitehall. Hence it is that the correspondence at the Admiralty has become so voluminous, that important papers are forgotten, and innumerable letters signed by persons who are totally ignorant of their contents.

Leaving the duties of the Naval Superintendents, as the local representatives of the Admiralty and the naval service, substantially unchanged, let us pass from the dockyards to the supervision of the ships in reserve. I propose that the fleet in reserve should be divided into subdivisions. The number of vessels composing a subdivision should be kept within moderate limits, and a professional officer should be appointed to take charge of each subdivision, whose duty it should be to make himself minutely acquainted, by continual surveys, with the condition of every ship placed under his superintendence. Had such a staff as I have proposed been in existence before the 'Megæra' was lost, a Royal Commission would not have been necessary in order to ascertain who was responsible for that disaster.

The manipulation of details must rest with the Naval Department, but I would venture to hazard the opinion that eight surveyors, three at Portsmouth, three at Devonport, and two at Sheerness, would, under the direction of the Controller, be able to keep themselves accurately informed of the condition of every available ship in the Navy. Objection may be raised to the expense of such a staff, but if we assume that the salary of the Surveyors of the Navy is fixed at 1,000*l.* a year, the annual expenditure on the additional staff would not exceed two per cent. on the cost of our largest ironclads.

Speaking generally, the surveyors would perform, under the directions of the captains of the same reserve, the same duties which are now undertaken by the shipwright officers of the dockyards; but inasmuch as the latter are at present confessedly overworked, there is reason to hope that the Navy would be better managed if they were relieved of a portion of their duties.

Once more I say in conclusion, extreme centralisation is the principal cause of dockyard mismanagement. To high Parliamentary, and perhaps to our permanent officials also, the surrender of a portion of their authority may be an unwelcome change, but they ought to recognise the necessity for the sacrifice.

I am, Sir,

Your obedient servant,

THOMAS BRASSEY.

PARLIAMENTARY SPEECHES.

SECTION II.

DOCKYARD ADMINISTRATION.

SPEECHES DELIVERED IN PARLIAMENT.

FEBRUARY 25, 1873. APRIL 30, 1874.

Reprinted from 'Hansard,' with additional quotations.

SPEECH ON MOVING AN AMENDMENT TO MR. SEELY'S
MOTION ON ADMIRALTY ADMINISTRATION.

In the House of Commons, February 25, 1873.

MOTION made, and Question proposed: 'That this House, in order to remedy certain defects in the administration of the Admiralty, recommends the Government to take into consideration the propriety of administering that department by means of a Secretary of State; and further, of appointing to the offices of Controller and of Superintendent of Her Majesty's Dockyards persons who possess practical knowledge of the duties they have to discharge, and also of altering the rule which limits their tenure of office to a fixed term of years.' —(Mr. Seely).

MR. BRASSEY: The Motion of the hon. Member for Lincoln refers to two separate departments of naval administration—namely, the organisation of the office of the Admiralty, and the management of the dockyards. The Amendment which he (Mr. Brassey) had placed on the Paper referred to the former subject only; but, inasmuch as the management of the dockyards was by far the more important and difficult problem of the two, he proposed to apply himself mainly to that branch of the subject.

Good administration in dockyards could never be secured except by appointing competent men to manage them on the spot, with plenary powers to carry out, according to their own judgment, the instructions received from the Admiralty. The managers of dockyards should be held individually responsible for failure in the performance of their duties, and receive a liberal recognition for faithful service. Having seen how vain the attempt has been to manage the dockyards from Whitehall, he could not but turn for guidance to his father's experience, which showed that a business, almost as large and complicated as that of the Admiralty itself, could be managed with success, by the delegation of the responsibility of local administration to well-selected agents.

Since he had the privilege of addressing the House on this subject, the loss of the 'Megæra' had furnished another convincing proof of the entire dependence of the central office on the local officers in the dockyards. Mr. Reed, in his evidence before the 'Megæra' Commission, disavowed any intention to undertake the supervision of 750 ships from Whitehall. 'He did not consider that it had been any part of the Chief Constructor's duty to be responsible, or to see even that the master shipwrights did their work thoroughly. A master shipwright was the highest shipbuilding and repairing officer belonging to the Admiralty, and the office of the Chief Constructor and his staff was only that of adviser to the Admiralty on professional questions relating to that work. His own opinion was that, if any action were taken, which tended to weaken the responsibility of the dockyard officers, and to place the care of the ships in the Admiralty office, for every mishap that we now had in the Navy we should have a hundred afterwards.'

Lessons
from the
loss of the
'Megæra.'

Mr. Barnaby expressed a similar opinion. Sir Spencer Robinson took the same view: 'When,' he said, 'you put a man at the top of his profession as a master shipwright, you put the greatest possible confidence in him; you take such steps as you can to remind him of the importance of the work he has to perform, and any further interference would be disastrous to the best interests of the public service.'

From what class, then, are the managers to be selected? A naval officer of the highest rank must be at the head of the dockyard, but for good workmanship and economy we must look to the professional officers of the yards. Whenever Admiral Superintendents have been before Commissions on dockyard management, they have universally declined to accept any responsibility either as to expenditure or workmanship, alleging that the professional officers were solely responsible. But if this be the case, the nominal responsibility of the Admiral for the internal economy of the dockyards, and the practice of requiring him to affix his signature to every document relating to shipbuilding, must be prejudicial to the public service. The great changes recently carried out in naval administration seem to have left this serious evil untouched. In his evidence before the 'Megæra' Commission, Mr. Andrew Murray said that 'while the Admiral or Captain Superintendent was necessary in a dockyard as a head, he should not be concerned in its details, or in the management of the men. But, unfortunately,' he said, 'it is the case with the rules now—and they seem to be attempting to go further in that direction—that they take the power out of the hands of the principal departmental officers.'

Admiral
Superin-
tendent
and pro-
fessional
officers.

Mr. Reed urged very strongly a similar criticism: 'The ship-building officers in the Admiralty have not,' he said, 'any power of controlling a dockyard, and if the result of this inquiry should be to establish an arrangement by which they should be authorised and enabled to look after the ships, I would consider it to be a very happy result.' Mr. Reed further expressed an opinion that 'the naval officer should be consulted on all parts of the ship which relate to his professional work, but the want of a definition of the ship-builder's duties, and of the naval officer's duties, worked very great mischief, and a great change in that respect was necessary.

The following observations on the same subject by Lord Clarence Paget in the House of Commons on April 3, 1865, are here inserted:

'There, are, no doubt, many arguments in favour of appointing scientific civilians to superintend dockyards; but the business of the dockyards is not confined to shipbuilding. I believe I may say that building forms the smallest portion of the business. There are the numerous details which sailors alone can criticise and determine upon. Moreover, if you were to put your dockyards into the hands of a civilian, you would have the captains wanting their ships altered and fitted; and it is well known that captains ask for a great many little things, which it would be extravagance to grant, and which a civilian would grant, because it is only a superior naval officer who can decide what is really necessary to be done to the ship.'

In a dockyard, the Superintendent must always be required, as the local representative of the Admiralty; and his experience afloat—the more recent that experience the better—would enable him to exercise a most beneficial supervision over the equipment of the ships. But these duties were entirely distinct from those involved in the internal management of the yard. The responsibility for all details should be with the professional officers, and it should be recognised by an adequate position, and by allowing a larger share of authority in matters of discipline and promotion.

Having agreed that we want the best shipbuilders in the country as managers of dockyards, we had now to consider what steps should be taken to induce the most qualified men to enter the public service. The pay should be gradually raised. Owing to the insufficiency of the salaries, we were continually losing some of the most valuable subordinate shipbuilding officers in the dockyards.

The surveyors at Lloyd's were almost all obtained from the dockyards. Large salaries were not the only means of making the employment attractive. The relative rank of the professional officer

should be considered. The civil manager of each dockyard should have adequate relative rank. He should rank with, but after, a rear-admiral, or at least with, but after, a post-captain. Again, honorary distinctions had never of late been bestowed, though meritorious services in the dockyards gave as good claim to the Order of the Bath as the work in any department of the Civil Service of the Crown. The same neglect of our great naval shipbuilders was not manifested in former days, when Sir William Sepping and Sir William Rule were distinguished—and very properly so—by some mark of the favour of their Sovereign. That men of so much ability as some of the present master shipwrights should be induced to remain in the public service, was a clear proof how easily the Government might make such employment attractive.

The professional officers should not be promoted workmen. Men promoted from the ranks often show that melancholy dread of responsibility which was so painfully exhibited in the 'Megæra' inquiry. Sir Spencer Robinson gave a strong opinion on this subject when he said that, 'knowing the timidity, and the sort of want of straightforwardness which belong to the class from which many of those officials were sprung, he considered that, being aware that they had committed an oversight, the whole of their evidence was untrustworthy.'

Recruitment of professional staff.

Sometimes the most suitable officer might be appointed from a private establishment, but as a general rule he would be found among the subordinates trained in the service. Occasionally a naval officer might have had an opportunity of showing a special fitness for the post.

Having made a happy choice of a fit person, it remained to consider what modifications might be desirable in the duties of the appointment. The correspondence should be materially reduced. Sir W. Edmondstone told the 'Megæra' Commissioners that the master shipwright was more occupied in office work than in the practical part of his duty; and that he was completely dependent on the assistant master shipwright and the foremen. The most elaborate returns afford no security for economy. Immediate skilful personal supervision over the labour employed and the conversion of materials can alone secure economical administration. Every master shipwright should be relieved of the duty of appending his signature to documents which he signs as a mere matter of form. A highly qualified confidential secretary should be assigned to every master shipwright, who should be authorised to deal with all matters of office routine. When a ship was to be built or repaired in the

Superior officers to be relieved of formal duties.

dockyard, the master shipwright should be required to make a careful examination of the work, and prepare his own estimate. If this estimate were approved, and the work ordered, his name should be inserted in the Naval Estimates, in a separate column, opposite the figures for which he was responsible. This practice would tend materially to create a sense of individual responsibility, which would never be felt by officials who were allowed to screen themselves from criticism behind the nominal authority of the Controller or Admiral Superintendent.

Personal
confidence.

The various suggestions which had been proposed could not be adopted, unless the Admiralty placed implicit reliance on their staff. Personal confidence between principal and agent could only be established after many years of careful training and thorough trial in subordinate positions. The head of a private business had the means of putting his agents to such a test ; but in the public service under a Parliamentary system, where political and personal considerations caused frequent changes, the same opportunity of long-continued observation of the conduct of subordinates was rarely given to a Minister at the head of a department. At the same time he was convinced that the more we decentralised, the more vigorous and economical our dockyard administration would be.

Promotion
of work-
men.

Among the illustrations which might be adduced to show the evil effects of excessive concentration of authority at the Admiralty, none could be more striking than the present arrangements for the promotion of workmen. The events which were daily occurring around us showed the difficulty of managing large bands of workmen. The professional officers were responsible for workmanship and economy in dockyards, and yet the artizans employed under their directions were placed under the Admiralty Superintendent for the regulation of discipline, while their promotion depended on the approval of the Controller in London. The Controller could have no knowledge of the individual merits of the workmen, but his nominal intervention deprived the local officers of their legitimate authority over the men. It was because the central authority had no other means of testing the capabilities of the workmen that recourse had been had to the plan of applying a literary test to artizans who were candidates for promotion. The qualifications required were manual skill and diligence ; but inasmuch as the central authority would not trust the local officers, the aspirant workman was tested by examination papers, although it must often happen that the most skilful artizan with the pen was the least skilled in the use of the adze and the saw.

With regard to the tenure of office of the Superintendent, who was a temporary, and of the master shipwright, who was a permanent officer, if the latter were raised to the position of manager of the yard, there seemed no reason why the present rules as to the appointment of Admiral Superintendent should be changed.

Term of appointment of Superintendent.

Before finally quitting the subject of dockyard economy, he would urge the importance of avoiding spasmodic and violent alterations in the shipbuilding programme. The right hon. Member for Pontefract had very wisely laid down a scheme for the production of a given quantity of armoured and unarmoured ships each year. The number of workmen, the supply of materials, the arrangement of the machinery, must be regulated with reference to the amount of work proposed. As regards the armoured ships, our policy must mainly depend on the preparations of other Powers. The condition of foreign navies was accurately known, and no important changes could be effected suddenly, or without our knowledge. The unarmoured ships could be rapidly produced whenever required, both in public and private yards. A large staff of workmen would not therefore appear to be necessary for the sole purpose of building vessels of that class, though enough must always be retained to undertake repairs of the fleet.

Changes in programme.

Encouragement was much wanted, both for workmen and sub-officers—such as foremen. A percentage on profits was inadmissible; neither could a percentage on savings be proposed without the risk of important work being scamped. But a distribution of gratuities to deserving workmen, on the satisfactory completion of any difficult work, might be a valuable stimulus to exertion.

Rewards for workmen.

He would now say a few words on the government of the Navy by a Board. He had on a former occasion supported without reserve a motion very similar to that now introduced. Further consideration had induced him to withdraw from his former position. The inquiry held before the Duke of Somerset's Commission, and the strongly expressed opinions of Sir John Hay, Sir Frederick Grey, Sir Alexander Milne, and Sir Sydney Dacres, had convinced him that he was ill-advised in advocating the dissolution of the Board. When the First Lord was—as it usually happens—a civilian, it must be right that he should have an opportunity of hearing more than one opinion on a controverted naval question. It must also be well that all the members of the Board should have a general knowledge of the proceedings of the Admiralty. Again, in matters of patronage it must be undesirable that a Minister should be entirely dependent on a single adviser. The Navy was a scattered service. Only a

Board of Admiralty.

certain number of officers could have served under the personal observation of one individual, and it must be impossible for an Admiral to place the same confidence in officers he has never seen in service, which he feels in those who have been under his own command. The presence of other officers at the council table of the First Lord would secure fair consideration for the claims of those who were not personally known to the First Sea Lord. It did not follow that the advice of the Board should impair the authority of the First Lord. In commercial life many boards were governed by the chairman with autocratic power. How much more easy must it be to secure a similar supremacy at the Admiralty, where the authority of the First Lord was effectually protected, both by usage and by the influence due to those personal qualifications, without which he would not have been selected to fill such an important post! The charms, too, of antiquity are universally recognised in an ancient country; and if by wisdom in practice all that is objectionable in point of form could be effectually remedied, it would not be wise to make a change on theoretical grounds. At the Admiralty, as in other departments of the Government, 'that which was best administered was best.' The hon. gentleman concluded by moving the amendment of which he had given notice.

Amendment proposed, To leave out the words 'Secretary of State,' in order to insert the words 'a Board of Admiralty with such modifications of constitution and procedure as experience has shown to be desirable,'—(Mr. Brassey),—instead thereof.

Question proposed, 'That the words "Secretary of State" stand part of the question.'

OBSERVATIONS IN COMMITTEE OF SUPPLY ON
NAVY ESTIMATES,*April 30, 1874.**Republished as a Memorandum with additional quotations.*

THE proper attitude which should be taken by the political critic in reference to naval matters was well described by Mr. Goschen, in his speech on naval administration, addressed to the citizens of London, at the Fishmongers' Hall :—

Naval expenditure not a part question. Mr. Goschen.

‘We have a profession which has come down through centuries, animated by the traditions which have clustered around it in the history of our country, and those who are connected with the force know that to them is committed indeed a high trust of which any man might be proud, and I have felt that, whether in office or out of office, it would be my duty to do what I could on behalf of the force. The words “out of office” may not be without their significance at the present moment. One can do something when one is in office. I think that those know little of the constitution and habits of this country who do not know that out of office also a great deal may be done. I will venture to say something upon this occasion that I would not have said during the three years during which it has been my duty to administer the affairs of the Navy, and it is this—that the conduct of affairs connected with the Navy no doubt becomes more and more difficult in proportion as those functions are performed in the full glare of light, which the press and the criticism of the public of the present day bring to bear upon every detail of the administration. I have never made this a cause of complaint, and do not make this a cause of complaint at this moment; but much passes which tends, though those who produce this effect do not intend it, to weaken the authority of the Admiralty and those who are bound to preserve the discipline of the Navy; and attempts are sometimes made which cause a kind of separate feeling

between the Admiralty and the officers of the Navy. I deplore anything of this kind; for nothing is more important than that confidence should exist between those who administer the force and the force itself. The duties of a civilian connected with the Navy, as I have always thought, were very delicate and peculiar, but I always thought it was his duty to understand and master them, so as to be the organ of the feeling of the services in the House of Parliament, in the same way as it is his duty to let the profession know what is the feeling of Parliament, as representatives of the great body of taxpayers by whom the services are supported. It is the duty, I think, of those who are in opposition, and I shall endeavour to perform the duty, to maintain the authority of the central power, and to show that that authority is intact, and, above all, not to attempt to make a party battle-field of the great services of the country. Everyone who has had to administer a great service will have learnt much; and I trust the lessons I have learnt will not be entirely thrown away. It will be my pleasure if I have to discharge that duty in opposition to remember the interests of that great profession with which I have been identified for some time, and to show that no feeling of party, no rivalry, and no political considerations could induce me, or anyone over whom I can exercise any influence, to do that which would decrease the power of this country as regards her Navy. It would be indeed a bad thing for one set of politicians to cry down the ships built by another party and *vice versâ*, because in that case the country would come to the conclusion that there were no ships worth having.'

Uniformity
in the ex-
penditure
necessary
to econo-
my.

The average yearly expenditure for the ten years previous to 1869 was 11,587,041*l.*, and for the next five years 9,785,915*l.* Experience had proved that the earlier estimates of the late Administration did not make adequate provision for the repairs of ironclads and the construction of a sufficient number of unarmoured vessels.

Steady em-
ployment
and
wages.

No real economy could be obtained in dockyard and naval administration without observing the principle of an equable rate of expenditure. In an essay on work and wages he had drawn attention to the fact that in 1865, when there was great pressure on the labour market, and wages reached a point at which they had never stood before, the shipwrights at Sheerness were content to work at 4*s.* 6*d.* a day when they could have obtained 6*s.* 6*d.* at many shipbuilding establishments on the banks of the Thames. They preferred more moderate wages with a certainty of employment to higher wages without such certainty.

Wages.

Mr. Stans-
feld, 1861.

The efficiency of the labour in Her Majesty's yards was ac-

knowledgeed by Mr. Stansfeld, in a speech delivered in the House of Commons on March 14, 1864.

‘The greater bustle of the private dockyards is due partly to the greater crowding. The shipwrights there receive seven shillings per day; in Her Majesty’s dockyards they receive from four to six shillings, and sixpence for superannuation. . .

‘The body of men in the dockyards are of great value in times of pressure, with the piece-work system.’

The introduction of the piece-work system into the dockyards has been recommended, on the ground that the payment of labour by results is the most effective guarantee of efficiency and economy of production. The witnesses from the dockyards, who have been examined by Parliamentary Committees, have frequently given evidence in this sense. Piece work

Mr. Thomas Ingram, Clerk of the Works at the Royal William Victualling Yard, Plymouth, reporting on the organisation of his department to the Earl of Camperdown, gave the results of his experience as follows :— Mr. Ingram.

‘Having been connected with Government works for the long period of upwards of forty years, I have witnessed many changes during that time in the mode of doing the work; and I have no hesitation in saying that the works have never been done more economically or more satisfactorily than at present, under the contract system. The only thing to guard against is the increase of day-work; for there is no question that day-work, in any department of the public service, is more expensive than work by measurement; and my experience teaches me that men employed on day work generally feel but little interest in expediting it.

‘Work done on the contract system, as at present, is preferable to a return to the former system of hiring a number of artificers and labourers, and attaching them to the establishments under the control of others, to do the work.’

In spite of the disadvantageous conditions, from the strictly economical point of view, which inevitably result from payment by time rather than by piece-work, we have the testimony, not only of parliamentary officials, but of men of great practical experience, to the effect that the work in the dockyards is executed at a fair price.

Mr. Laird, when examined before the Select Committee of the House of Commons on Admiralty Moneys and Accounts, gave some important evidence on the subject :— Cheapness of labour in dockyards. Mr. Laird.

‘I should say that the dockyard wages are lower than in many private yards—certainly than in those of London and Liverpool.

‘And they obtain these men at lower wages, because they hold out the prospect of pensions and continuous employment?—Yes; it is a very great inducement to men to work at lower wages. At the different dockyards there are a great number of men, their sons, and their grandsons, who get into the same employment because of the pensions. I consider that a private firm has to pay the current rate of wages of the time, and of course pays a higher rate generally than is paid in the dockyards, because of the pensions to dockyard servants.’

Dismissals
of work-
men.

Hasty dismissals of workmen from the dockyards should therefore be avoided as tending to impair the confidence of permanency, but it did not follow that the reduction of the numbers of established men was impolitic. If the number of men on the establishment were unduly increased, the dockyards might be encumbered with many useless people, against whom no definite charges could be made, and who could not therefore be got rid of.

The Liberal administration having been frequently charged with inconsistent conduct in relation to the dockyard workmen, the answer of Mr. Childers to these charges, as contained in his speech to his constituents at Pontefract, on the occasion of the dissolution of Parliament, in 1874, may here be inserted.

Mr. Childers, 1874.

‘When I took office at the Admiralty I found that the administration of it had for many years been feeble and vacillating. I found that there were two great evils which were destroying the efficiency of Her Majesty’s Navy, those obstacles being an enormous number of officers—far more than could possibly be employed—and the scattered condition of the fleet all over the world. In 1867 the number of men employed in the dockyards was increased by some 1,400, and between February and July, 1868, the number of men was reduced by more than 4,600, 4,300 of whom were discharged without either pension or gratuity. I found that the late Board of Admiralty, after having proceeded to an unprecedented extent in the building of ships, suddenly came to the resolution to build no more ships. I introduced a system of perfect responsibility, in the first place; in the second place, I determined to deal with the immense list of officers. I found that there were some 7,900 officers of all ranks employed in sea service, and something like 1,100 civil officers employed on shore—in all, some 9,000 officers. Before I had left the 9,000 had become 7,000; at the present time the number is 6,400.’

Mr. Gladstone.

In addressing his constituents at Woolwich on the same subject, Mr. Gladstone said:—‘I now come to a question of great local

interest to you, upon which an old controversy has been revived. There is a gentleman named Liardet, whose address to you I have the advantage of holding in my hand. He says he will always oppose the miserable policy of cheeseparing, of which in this borough, and especially in Woolwich and Deptford, you have had such pitiful examples. Now, what is the fact with regard to this "cheeseparing economy?" The fact is this:—For once economy was practised by a Conservative Government, and it was a Conservative Government which practised the cheeseparing economy in Woolwich and Deptford. I will recite to you again the facts which I recited to you at Blackheath in 1871, and they are briefly these:—On January 1, 1868, the number of persons employed as labourers in the dockyards was 20,213. On December 1, 1868, which was the day I was summoned to Windsor for the formation of a Government, the number had been reduced from 20,213 to 15,954. It was further reduced under the present Government from 15,954 to 14,511. The result is that the reduction made by us was a reduction of 1,463, and the reduction by those who came before us, by the friends of Mr. Boord, was 4,359.'

Turning to the general condition of the Navy, the following observations of the Compiler are republished from Hansard's *Reports*:—

The slow progress in the construction of ships suggested inquiries as to whether it was possible to effect some economy in the large expenditure on the repairs of the Navy. The decay of the boilers in Her Majesty's ships involved a large expense, and he had lately made an investigation with the view of ascertaining whether there had been anything either in the construction or the mode of using the boilers of our ironclads which had led to their premature deterioration. From a recent return, it appeared that the 'Minotaur,' completed in 1867, and the 'Valiant,' in 1868, were now receiving new boilers, and that the 'Bellerophon,' completed in 1866, received new boilers in 1870. In these cases the duration of the boilers was decidedly inferior to the results obtained in the merchant service. By the kindness of Mr. Burns, one of the owners of the ships of the Cunard service, he was enabled to state the results obtained in two steamers belonging to that company. The steamship 'Russia' left Liverpool on her first voyage on May 15, 1867, and in November 1872 completed her fifty-third voyage to and from New York. In this service she had run 328,600 knots, and was then laid up for repairs. Her boilers were lifted and retubed and the bottoms renewed, a new steam-chest and funnel were added, and her engines were put in thorough working order, the whole being effected at a

Repairs
from pre-
mature
decay of
boilers.

total cost of 16,444*l*. She left Liverpool again in the following March, and up to March last had performed ten additional voyages, or 62,000 knots. The 'Scotia' left Liverpool on her first voyage to New York in May 1862, and commenced her seventy-eighth trip in April 1874, having in the interval run a distance of 483,600 knots. It was found that the Cunard steamers required retubing after about fifty voyages between Liverpool and New York, and the boilers were then retubed, but not renewed in any other way. He questioned if any such result had as yet been accomplished in a man-of-war. Again he entertained some doubts as to whether the boilers of the ships in reserve were as carefully preserved as they ought to be. It was the practice, he believed, until a recent period, to get up steam at least once a year in every ship in the reserve. He was informed that such a plan was most detrimental to the boilers.

Engineers
elected
from
private
trade.

It remained to be considered whether the appointment and professional instruction of the engineers of the Navy left anything to be desired. It seemed to him that too many highly educated men were employed in the engine-rooms of our men-of-war. Skilled mechanics would perform the manual duties as well or better, and they would not feel the social disadvantages of the junior grades of engineer officers nor the same discontent at the want of promotion. A change in this direction had recently been made with satisfactory results in the United States Navy. There were in our service a class of engine-room artificers. These men had become more and more essential on board ships fitted with the complicated appliances introduced into the later ironclads. They ought to be operative mechanics of the highest class.

Engine-
room
artificers.

The system of introducing into the Navy engineers from the private engine-building establishments had been abandoned. All our engineer officers were now trained by the Government, and it was a question whether that training was in all cases as practical as it ought to be. He should be glad to see the opportunity still given to the sons of *employés* in the dockyards to become engineers in the Navy; but he should recommend that a certain proportion of the appointments should be given to individuals coming with satisfactory recommendations from the great engine-makers.

PARLIAMENTARY SPEECHES.

SECTION III.

*THE PROFESSIONAL OFFICERS
OF THE NAVY.*

SPEECH DELIVERED IN PARLIAMENT,
AUGUST 1, 1879.

*From 'Hansard's Reports,' with numerous additional quotations, and the
omission of references to salaries.*

THE PROFESSIONAL OFFICERS OF THE NAVY.

August 1, 1879.

MR. BRASSEY rose to call attention to the responsibilities, rank, and emoluments of the professional officers in Her Majesty's naval yards. He said the position of the constructive departments in our dockyards was a most important question. If the constructors of the Navy were inefficient our dockyard management would be a failure, our ships would be too costly, or they would be badly built. On these two cardinal points of cost and workmanship the constructors were solely responsible. It was laid down in the well-known memorandum prepared by Sir Spencer Robinson for the information of the Duke of Somerset's Committee on the Board of Admiralty, that the Superintendent was in no sense responsible for the quality or the cost of the work done in the dockyards. He was the vehicle through which orders passed from the Admiralty to the heads of departments, but, if a work which ought to have been done for 10,000*l.* cost 16,000*l.* he was not called upon to account for this excess. When a question was asked he directed the master-shipwright to reply. All the naval superintendents who were examined by the Dockyard Commissioners in 1860 took a similar view of their position.

It was obvious that the 'superintendent,' whose previous experience had been that of a sea officer, could not be held responsible for the performance of duties which more properly belong to the shipbuilder. The Controller of the Navy himself did not profess to be a competent authority on professional questions. Sir Baldwin Walker, after twelve years' service as Controller of the Navy, told the Dockyard Commissioners that he was not a professional officer, nor competent to give an opinion with reference to shipwrights.

Turning from the executive to the professional officers, Mr. Saunders, the Chief Constructor at Chatham, stated in his evidence before the Committee on the Store Department, in 1876, that the superintendent of the yard was responsible for the general manage-

ment, for the maintenance of discipline, and for the distribution of the various Admiralty orders to the heads of departments. His naval experience was valuable in determining questions as to the fittings and internal arrangements of the ships under construction; but the professional officers were responsible for the quantity and quality of the work performed. Only recently, the Captain Superintendent had very properly observed, in supporting his position, that if there were any failure in carrying out the programme of works, it was he who should be held responsible.

The saving in the cost of the 'Iron Duke' and other vessels, for which Admiral Hall claimed great credit for Pembroke Dockyard, was attributed by that gallant officer solely to the attention and skill of the professional men. Admiral Chamberlain confirmed the view taken by Admiral Hall. When asked whether he held himself responsible for the economy with which a ship was built, and for seeing that a ship was completed within the estimates sent down from the Constructor's Department, he replied that he could not say he considered himself strictly responsible. An account of the expenditure on each ship was brought to him every week, for his information, and if anything appeared to him unsatisfactory, he questioned the Chief Constructor on the subject.

Admiral
Hall.

The inquiry into the loss of the 'Megæra' brought out distinctly the sole responsibility of the professional officers for advising the Captain Superintendent, and through him the Board of Admiralty, as to the seaworthiness of a ship for any voyage or service that she was to undertake. He wished to disclaim any desire to see the naval superintendents of dockyards superseded by civilians. The argument in favour of naval superintendents was well put by Admiral Hall, in his evidence before the Stores Committee. While admitting that a naval officer could not pretend to be a shipwright or an engineer, he considered that he might be expected to possess other still more important qualities, such as common sense, sound judgment, and self-command. Being unconnected with any class in the dockyard, he is readily acknowledged by all as their superior. And as he has to superintend the acts of officers of a good many different professions, the fact that he has been familiar from his earliest years with the article which the dockyards are employed to manufacture, viz., a ship, is a more useful general qualification than that he should possess the intimate acquaintance of an expert with any particular trade.

Admiral
Hall.
Necessity
for naval
superin-
tendents.

It was obviously most important that the constructors should be qualified to bear the weight of responsibility thrown upon them. They should be men of education, technical knowledge and experience, and

Admiral
Smart's
Committee

with ability to direct the labours of large bodies of men ; and he asked the House seriously to consider whether the rank and emoluments of these officers were sufficient to command in all cases men of the necessary qualifications for the public service.

Their position was the subject of very serious consideration on the part of the Committee on Dockyard Economy, of which Admiral Smart was the chairman. The report of Admiral Smart's Committee was presented so long ago as 1860 ; but its suggestions are equally applicable to the state of things now existing. The Committee recommended that the status of the civil officers in dockyards should be raised. They thought that the line between the employers and the employed had been very indistinctly drawn, and that there had been a tendency to class the chief professional officers among the employed. They thought that the master shipwrights and chief engineers should thenceforward be looked upon as commissioned officers, and be considered as identified with the Admiralty as the directors or employers of the labour, and not with those who execute the actual manual labour. A superior position in society, and a superior education, would always have their weight, when placed in a proper position. The views of the Committee would be confirmed by our general experience of human nature. Respect for authority, as it was truly said by Dr. Johnson, was more easily granted to one whose father has had it than to an upstart. While on the one hand deference was not so readily yielded by workmen to a chief promoted from the ranks, as to an officer possessing greater social advantages, on the other hand, officers not born to command were frequently afraid of the responsibility of the position to which they had been raised.

Megara'
Commission.

The impressions drawn from their inquiry into the loss of the 'Megera' drew from the Commissioners some strong observations on this point. They said : ' We feel compelled to remark that we have formed, however unwillingly, an unfavourable opinion as to the mode in which the administration of Her Majesty's Dockyards is generally conducted. The officers appear to us too often to have done no more than each of them thought it was absolutely necessary to do, following a blind routine in the discharge of their duties, and acting almost as if it was their main object to avoid responsibility.'

Mr. Oliver
Lang.

The defects in the regulations at present in force with reference to the selection of men for the principal professional positions in the dockyards, and the inadequacy of their position in the service, could not be illustrated more clearly than in the observations addressed by Mr. Oliver Lang, the able Master-Shipwright at Chatham, to the Dockyard Commission of 1860.

‘I do not,’ he said, ‘myself object to a considerable infusion of the working class, and their being allowed to rise to the highest offices in the branch ; but, at the present time, it is not that, but it is the shutting out of the sons of gentlemen entirely. No gentleman can put his sons into it. I have five sons myself, and not one of them have I the slightest intention of bringing up to my own profession in the service.’

Similar opinions had been elicited by Admiral Smart’s Committee, from the dockyard officers whom they had examined. Both Mr. Abethell and Mr. Edye considered that men of higher education than could be expected from a labourer brought up at the dockside ought to be selected for the superior positions in the dockyards.

Messrs.
Abethell
and Edye.

No substantial change had been made in the system of recruiting officers for the Constructor’s Department since Mr. Lang’s evidence was given. It was stated by Mr. Barnes, the Surveyor of Dockyards, in his evidence before the Stores Committee, that the present master shipwrights, in almost all cases, had been originally entered as apprentices in the Dockyards. The master shipwright was now called chief constructor ; but his position was still subordinate in relative rank to that of the master attendant. The head of the shipbuilding department, who at Portsmouth had from 4,000 to 5,000 men under him, was subordinate to the head of the rigging department, who had at that dockyard 440 men under his orders. Sir Houston Stewart had very justly called attention to this anomaly ; and his opinion on this point might be received with the more ready acceptance, because he was a strong advocate for the retention of a naval officer at the head of every dockyard.

Mr.
Barnes.

Master-
shipwright
called
chief con-
structor.

Sir
Houston
Stewart.

He had referred to the case of the ‘Megæra,’ as an example of the disasters that might occur from neglect of duty, but neglect of duty in the form of omission to do a thing which ought to have been done was happily a rare occurrence in Her Majesty’s dockyards. Extravagance and waste in going beyond the necessity of the case in the matter of alterations and repairs were far more common, and we had done nothing to encourage thrift and economy. The results that necessarily followed had been pointed out and perhaps exaggerated, not only by committees and commissions but by independent critics of great authority. Those results were due to the absence of any direct pecuniary interest in economising expenditure.

Dockyard
extrava-
gance.

In his ‘Essay on Over-legislation,’ Mr. Herbert Spencer said :—
‘Walk through a manufactory, and you see that the stern alternatives of contrivance or ruin dictate the saving of every penny. Visit one of the national dockyards, and the complaints you make

on any glaring wastefulness are carelessly met. In all social agencies, in which duty done and income gained do not go together, a like indifference, or, it may be, corruption, is found, and is greater or less in proportion as the dependence of income upon duty is remote.'

Admiral
Smart's
Committee.

Admiral Smart's Committee had referred to this question in their report. They thought that too little regard had been paid to cost as distinguished from workmanship, and they recommended that some tangible mode should be provided by which any officer could be able to claim the credit of public approbation for any economy to the public service, which had been obtained by his good management. Persons accustomed to administrative business would readily concur in the observation of Lord Clarence Paget that 'where one dockyard is found to conduct the business more economically than another, it should be an understood thing that the officers of that yard, who had by their attention to these important matters caused a saving of public money, should be advanced—that encouragement should be given to economy.' Nothing, however, had been done to carry out that suggestion. No instance had occurred of an officer having been dismissed or suffering a loss of salary for extravagance, nor had any officer been promoted or pecuniarily rewarded for economical administration. When a ship of unprecedented dimensions and novel design was successfully launched, it was the custom to give a paltry gratuity to the chief constructor at the dockyard where the vessel had been built; but the absence of any such encouragement as Lord Clarence Paget recommended was apparent in the estimates which are presented to the House from year to year.

Inequality
of salaries.

There was no equitable principle in the amounts of the salaries awarded to the chief constructors at the several yards. The chief constructors at Portsmouth received 850*l.* for supervision over an annual expenditure of 326,191*l.* on wages and probably an equal amount on stores. The chief constructor at Pembroke had 700*l.* a year for supervision over a body of men whose aggregate wages amounted to 97,000*l.*

Personal
super-
vision.

In connection with this subject he would call attention to the strong representations which had been made by Admirals Hall, Chamberlain, Fellowes, and Sir Cooper Key to the Committee on Stores, as to the great importance of constant personal supervision of the work in progress on the parts of the chief constructors in the several dockyards. The success attained in Pembroke Dockyard in building ships within the estimates had been exemplified in several remarkable cases which were quoted by Admiral Hall. The 'Penelope' was the first ironclad ship built at Pembroke. The

Pembroke.

estimate for her construction was 150,000*l.*, the actual cost 146,000*l.* The estimate for the 'Inconstant' was 158,689*l.*; the actual cost 138,585*l.* The estimate for the 'Iron Duke' was 200,000*l.* the cost 146,000*l.*; the expense of building the same ship by contract would have been 209,000*l.* These results he attributed to the great care which the professional officers at Pembroke were able to bestow on their work from having time enough at their disposal to give the requisite attention to the details of construction.

Admiral Chamberlain expressed a similar opinion. 'In all my experience,' he said, 'I have never known a chief constructor who had a moment to spare, and I have invariably lamented that he has not had much more time to be out of doors, superintending the workmen.'

Admiral
Chamber-
lain.

Admiral Fellowes made a strong representation on the same subject. He said that it was imperative that the constructive duties of the yard should receive more attention. There were at Chatham 3,800 men, who were working night and day, and there was only one chief constructor and one constructor; whereas under the old system the work would have received the supervision of a chief constructor, two constructors, and other officers, and this at a time when a smaller number of men were employed, and the dockyard covered only 90 acres instead of as at present 500 acres.

Admiral
Fellowes.

The efficiency of the local officers was the only guarantee for the good administration of the dockyards. If a disaster occurred such as the loss of the 'Megæra,' or the explosion on board the 'Thunderer,' the vials of Admiralty wrath were poured out in a cumbrous and not very useful fashion in long minutes and pages of new instructions, neither of these being really needed to explain the nature of their duties to dockyard officers worthy of their positions. Dismissals should be more frequent for flagrant neglect of duty, while ability and fidelity in a very difficult and responsible public employment should be generously rewarded.

Dismissal
for neglect
of duty.

According to the present practice, the officers of the yards had but a small share in the preparation of the estimates. Admiral Foley, being questioned on this point by the Stores Committee, said that he had nothing more to do with the preparation of the estimates than meeting the Controller of the Navy at the yard and talking over what the work for the ensuing year was to be. From Sheerness yard they simply sent up an account of the amount of work to be done, and the estimates for carrying out the programme were made in the Controller of the Navy's department. Admiral Hall made a similar statement, adding that when a ship is ordered to be built, the

Estimate
prepared
at Admi-
rality.

Controller of the Navy informs the dockyard that for material and labour a certain sum has been allowed to be expended.

Local estimates.

With the view of strengthening the sense of responsibility in the dockyard officers, for cost as well as workmanship, he would propose that, whenever it was contemplated to build a ship in a particular dockyard, the Chief Constructor should be called upon to prepare an estimate of the cost. That estimate should be revised at the Admiralty, and when an agreement had been finally established between the Admiralty and their local officers as to the amount of the estimate, the figures should be bracketed, in the next Navy Estimates, with the name of the dockyard officer who was responsible for them. A spirit of emulation would thus be encouraged between the different yards, while bad workmanship might be prevented by the frequent supervision of an Admiralty surveyor. The work, in short, should be carried on in the same way as if the Admiralty were a shipowner, who had let a contract for the construction of a ship to a shipbuilder, and paid for the work done on the certificate of one of Lloyd's surveyors.

He had already explained that, in offering these suggestions, he did not advocate any sudden change in the present form of dockyard administration. He quite appreciated the reluctance of the First Lord to give large salaries to officers with whose qualifications he must be imperfectly acquainted. This difficulty would, however, become sensibly lessened now that the Admiralty had reorganised the staff of the Constructor's Department, and made the professional appointments in the dockyards and at Whitehall interchangeable. It should be considered a promotion to a chief constructor, who had been working under the eye of the superior officers of the Navy, to be taken from Whitehall and appointed to a dockyard.

French professional staff.

The organisation of the French Constructive Department had been referred to by the hon. member for Nottingham in his speech of last session on our shipbuilding policy. It was equally worthy of examination in connection with the points to which he now called attention. The French professional officers held a higher relative rank than we had accorded to our constructors. The 'Ingénieurs de la Marine' were selected from the 'Ecole Polytechnique,' and their promotion was secured by an appropriate gradation of ranks corresponding with those established in the executive branch of the Navy. The staff included an inspector-general, who ranked with but after a vice-admiral. He resided in Paris and made periodical visits to the ports. Under him were eleven directors of naval construction, all ranking immediately after a rear-admiral in the

French Navy but before a captain. At the ports the constructive departments were represented by an inspector-in-chief of the naval administrative services, who was charged in the name of the Minister of Marine with the supervision of all the professional work in the dockyards. The inspector was subordinate in rank to the Préfet Maritime, who was a vice-admiral, but in the discharge of his duties he acted under the orders received from the Minister of Marine and corresponded directly with him. The constructive staff for the English Navy should be selected from the Academy at Woolwich. They would receive their special training at Greenwich, and at the dockyards. They should have an honorary relative rank, like that which was given in the Corps of Naval Architects in the French Navy, and be entitled to the privilege of wearing a civil uniform. The criticisms of foreigners were often most suggestive. M. Xavier Raymond, formerly a frequent contributor on naval subjects to the pages of the *Revue des Deux Mondes*, made the following remarks in his volume entitled *Les Marines de la France et de l'Angleterre*:—

‘By an anomaly most remarkable the administration of the Navy is conducted by a Board, and that Board is selected almost exclusively from one only of the numerous specialities which must be combined in order to constitute a naval establishment. Of the six individuals who form the Board, two are members of Parliament, and do not belong to the Navy. The four others are naval officers. The administrative branches, works, and buildings, naval construction, gunnery, health are rigorously excluded.

‘As for the constructors in the ports, if their salaries were not inadequate, they occupied a position of inferiority in relation to the executive branches unworthy of the talent and the services of several of their number. The result was that certain individuals, and those perhaps the most distinguished, have left the service. The name of Mr. Reed is quoted as a prominent example.’

In the German Navy, a special staff of officers, entitled ‘Engineers of the Navy,’ had been formed, to superintend the construction of ships and machinery, and the engineering works of the dockyards. This staff was divided, according to their respective duties, into three classes, charged with the construction of ships, the construction of machinery, and engineering works. A regular gradation of ranks had been established, at the head of which are the directors, eight in number. The subordinate ranks include eleven engineers-in-chief, twenty-three engineers, and twenty-two sub-engineers.

It may be convenient to introduce the following historical review of the various efforts to establish an effective system of training for

German
profes-
sional staff.

Schools of
naval
architec-
ture.

naval architects in connection with the Navy, taken from a paper published in the *Annual of Naval Architecture*, 1874, entitled 'Three English Schools of Naval Architecture:—

'Until the beginning of the present century no attempt was made in this country to provide systematic and thorough professional training for naval architects. Indeed, the Commission of Naval Revision of 1806 recorded the opinion that the highest officers then responsible for the design and construction of the vessels of the Royal Navy were, as a body, sadly ignorant of the theory of naval architecture, and lacking in general education. Such was the condition of things in this country sixty years after Bouguer, in his famous *Traité du Navire*, had outlined the great principles which still govern the practice of the naval architect. No wonder, therefore, that the Report of the Commission led to the attempt to remove this blot upon our fame as a maritime people by the establishment at Portsmouth of the first School of Naval Architecture. This school was opened at the commencement of 1811, and was conceived in the grandest spirit, at least so far as the building was concerned, for over 30,000*l.* are said to have been expended on its erection.

'The school thus founded remained in operation for more than twenty years, but only trained about forty students. It was intended exclusively for the education of a higher class of apprentices, who were guaranteed appointments to important offices in the Royal Dockyards on the satisfactory completion of their course; and it was an experiment in a direction which has always found favour with many persons who consider it preferable to provide candidates for the higher professional offices from the better-placed and more liberally-educated classes. The artisan class was not expected or desired to supply students to this school, and only the lower grades of promotion were left open to their ambition. This is not the place to discuss the wisdom of such a policy; it must suffice to state the facts, and to add that the expectations of the students were so badly realised, that a large proportion of them quitted the Government service before many years had elapsed. Amongst the best known of Dr. Inman's pupils must be named Mr. Isaac Watts, late Chief Constructor of the Navy. Messrs. Reade, Chatfield, and Creuze, also attained a prominent position by their Reports on Naval Construction, and designs for sailing ships of various classes. The school was closed by Sir James Graham, when First Lord of the Admiralty, in 1832.

'The second School of Naval Architecture was opened at Portsmouth in 1848. The Rev. Joseph Woolley was the Principal. Quite

a different policy was pursued from that followed in 1811 for the first school. Entry to the new school was made contingent upon merit, not upon birth or connection ; instead of introducing a hard-and-fast division between classes and shutting out the lower from advanced training, or the prospect of promotion to the highest posts, all candidates were placed upon an equal footing. Those apprentices who by their progress in the studies of the dockyard schools, and by their position on the examination lists, proved themselves best adapted for receiving the higher education, were selected to receive it, and subsequent experience has proved that, to say the least, nothing has been lost by this change of policy. It was accompanied, however, by another change which seems more open to question—there was no promise of after-appointment to positions such as those for which the education of the students best fitted them.

‘The second school had a brief existence. Sir James Graham, whose conduct had the merit of consistency, if questionable in other respects, closed it also after it had been at work for about five years, and had trained some score of students ; and for the second time an end was put to the hopes of efficient training for naval architects. Among Dr. Woolley’s pupils were Mr. Reed and Mr. Barnaby.

‘Ten years elapsed after the closing of this school before another attempt was made to provide for the education of English naval architects. The great features of the new scheme were decided upon early in 1864, and the necessary funds were provided in the Estimates for 1864-65. Objections were, of course, raised in certain quarters, but they were met without difficulty, and Parliamentary approval was obtained. The course of instruction was settled by Mr. Reed, acting on behalf of the Admiralty, and Dr. Woolley and Captain Donnelly, acting on behalf of the Lords of the Council ; their labours being greatly assisted by the suggestions of the Council of the Institution of Naval Architects, whose advice was asked for respecting the course of study for private pupils.

‘Dr. Woolley was appointed as the Inspector-General, under whose direction the studies were to be conducted ; and no better guarantee could have been given that these studies would be both thorough and extensive, his previous experience at Portsmouth and his eminence as an authority on the theory of naval architecture peculiarly fitting him for the post. Mr. Merrifield was appointed Principal, Mr. Purkiss (the Senior Wrangler of that year) became Vice-Principal, and the instructorships in Chemistry, Shipbuilding, Engineering, Drawing, &c., were well filled. And so on November 1,

1864, was commenced under the most promising auspices the third English School of Naval Architecture.

Engineer
students.

‘As regards the purpose for which this higher training was given, the Admiralty Circular announcing the formation of the school was not very precise, simply stating that it was hoped by this means to obtain a superior class of officers for the dockyards and the Engineer Department of the Navy. The students were, in fact, cautioned against regarding any superior position as guaranteed to them by their appointment to the school; their future was to be determined in accordance with their merits. The engineer students having been originally entered with the view of being trained for after-employment in the Navy, of course knew the worst that could happen to them; but the naval architects knew absolutely nothing of their probable employment after leaving the school until a precedent had been created by the appointments of the first set of students who completed their course. On the other hand, the students were at first under no legal obligation to remain in the service of the Admiralty; and of this freedom not a few have since availed themselves, accepting higher and more lucrative appointments in private establishments.

‘That sufficient work to utilise the training of all the Admiralty students can be found at the Admiralty, in the dockyards, the Navy, and elsewhere, is certain; that it is advantageous and economical to utilise their acquirements as fully as possible cannot be denied; but that the Government service has not hitherto offered sufficient inducements for such men to remain is evident from the fact that no less than seven naval architects and an equal number of engineers have voluntarily quitted it and entered other employment.’

Secretary
U.S.N.,
1877-78.

The subjoined extract from the report of the Secretary for 1877-78 will indicate the plans in contemplation on the part of the naval administration at Washington:—

‘One disadvantage under which the Government has laboured in building ships has been occasioned by its neglect to educate its shipbuilders.

‘It is believed that we should soon be supplied with a sufficient number of competent naval constructors by selecting them from the young men who enter the Naval Academy and show an aptness or predilection for mathematical and mechanical studies. There are many who enter there whose natural taste lies in this direction, and to whom such studies would be more attractive than those purely nautical. They enter the Navy for life, and have to be provided for by the Government. If, therefore, a certain number of cadet-

midshipmen, willing or desirous of entering the corps of naval constructors, and most proficient in the studies before named, should pursue, for two years at least, a course of study exclusively devoted to the object to be attained, that is, to mathematics and their application to mechanics, descriptive geometry, drawing, with kindred subjects connected with their future profession, a corps of naval architects, fully competent for planning and constructing the best ships, would, in a few years, be supplied.'

He would venture to urge that the constructors of the Navy should be constituted as a distinct corps like the 'Ingénieurs de la Marine' in France, and that we ought to have one or more naval architects in every dockyard capable of preparing competitive designs for new ships. In the French service the work of the central office was limited to the specification of the qualities and the general features of the new ships it was proposed to build. The programme having been prepared at head quarters the dockyards were invited to furnish competitive designs, and the most successful was selected. That plan insured a wide development of ideas, and prevented the shipbuilding of the Navy falling into a groove under the direction of a single mind.

French
training.

Turning from the dockyards to the Council of Construction. The responsibility for the design and construction of new ships and for supplying those ships with proper machinery rested exclusively with the civil members of the staff of the Controller of the Navy. The Controllers themselves have on all occasions most fully acknowledged their dependence on the aid of professional men.

Salaries.

It was on this ground that the abolition of the office of Controller had been recommended by many naval authorities with extensive experience at the Admiralty. Sir Frederick Grey, in his evidence before the Duke of Somerset's Committee, said that he should recommend that the office of Controller should be abolished, and the second Sea Lord put at the head of the dockyards and the Constructive Department, the Chief Constructor being made principal officer like the other principal officer. He rested his recommendations on the ground that the naval head could not possibly look into the details of the Constructor's business, that naval advice was more valuable in laying down the requirements which any particular design that might be called for ought to meet, and that the Controller ought to be responsible for the design on which it was his duty to advise the First Lord.

Controller.
Sir
Frederick
Grey.

He had no desire to see changes suddenly introduced without regard to the individual merits of the officers employed. He fully

appreciated the difficulties of the political heads of the Admiralty in this matter. They might be excused if they hesitated to give a very rapid advancement to officers of whose capacity they could have but scanty personal knowledge. They would all agree, however, that talent could only be attracted to the public service and retained in it by offering positions worthy of acceptance. The Admiralty might begin as opportunity offered by improving the position of heads of departments at Whitehall. The case having been stated, he would leave it with confidence to the experienced judgment and mature consideration of the First Lord of the Admiralty and his colleagues.

PARLIAMENTARY SPEECHES.

SECTION IV.

ADMIRALTY ORGANISATION.

SPEECH IN PARLIAMENT ON THE MOTION OF MR. CORRY.

MARCH 18, 1872.

Reprinted from 'Hansard,' with additional quotations.

ADMIRALTY ORGANISATION.

MR. BRASSEY agreed with the right honourable gentleman the Member for Tyrone in thinking that Parliament ought not to treat the discussion of naval affairs as a party question. He earnestly deprecated the introduction of party feeling into their deliberations on naval affairs. We were too apt to condemn our administrators hastily for trivial errors of judgment. It might therefore interest the House to hear an opinion as to the condition of the English Navy which had recently been expressed by Admiral Porter, and published with the last report presented to Congress by the Secretary to the United States Navy.

Admiral
Porter,
U.S.N., on
the state of
the Navy.

Admiral Porter said:—‘By referring to the list of ironclads of foreign nations and comparing it with that of last year, you will perceive a large increase in that class of vessels. The fleet of Great Britain in particular is most formidable. Never, in the history of England, was she better prepared for war than at the present moment in ships, material, officers and men. That I know to be the case from actual inspection of her vessels of war by our most intelligent officers. The introduction into our Navy of the “Monitor” system was the death-knell of the great wooden fleets of Europe. England in particular suffered by that change; but, nothing discouraged, the Board of Admiralty went to work, and devised plan after plan, until the British fleet has now the best and finest equipped iron ships in existence, capable of contending with the combined navies of Europe. To suppose that this Board of Admiralty, so unjustly criticised, had not made mistakes would be out of the question; but their errors are comparatively few, and have in most instances been rectified.’

The country should accept with confidence this favourable opinion of a distinguished American Admiral.

Chief
Engineer
King,
U.S.N.

The same favourable opinion was expressed in his recent publications by Mr. King, when comparing the ship-building policy of England, France, and Germany. Speaking of the shipbuilding programme of the French Navy, he said:—

The English Admiralty have pursued a different and a wiser course. Instead of spending their great resources on the construction of ships which were mere facsimiles of each other, they have, with rare exceptions, in successive designs made onward steps in offensive and defensive power. From the very first, the English designers struck out an independent course.

Mr. King spoke in very different terms of the German Navy:—

German
Navy.

No originality has yet been exhibited in naval architecture by the German constructors or engineers. It has been thought sufficient to repeat the types which the English have tried and found successful, and as a consequence of this, considering the long time it has taken them to build an armoured ship, and the advancement recently made in naval construction in England, they are now completing types far inferior to the late English designs, and they will have nothing to match the 'Thunderer,' 'Devastation,' or 'Dreadnought,' nor the Russian 'Peter the Great,' nor the Italian 'Dandolo' and 'Duilio, to say nothing of the 'Inflexible.'

The whole subject of Admiralty organisation was beyond the scope of a single speech. He wished, therefore, to confine what he had to say to the department of the Controller. In passing, however, he would remark that as a civilian the First Lord of the Admiralty must have naval advice, and whether the advisers were called a Board, a Council, or a Committee, the result would be practically the same.

Board of
Admiralty.

Important evidence on this subject was supplied by the witnesses who were examined by the Select Committee on the Board of Admiralty, of 1861:—

The Duke of Somerset said:—

Duke of
Somerset.

For the administration of the Navy, I begin by assuming that it is necessary to have a Cabinet Minister at the head of the department. That Cabinet Minister will very seldom be an officer of the Navy, or at least of such standing in the profession, as well as standing in Parliament, as would make him a fit person to be in that position. I then consider that he must have naval officers to assist and guide him; and that without such assistance, in the form of a Board or Council, he would be helpless.

It would be a great advantage to a person, even if he were a naval man at the head of such a department as the Admiralty, to have other naval officers who have seen service in different parts of the world.

The First Lord has often exercised power absolutely.

What the First Lord would wish to do would be to get at the right opinion, after having heard the opinions given by different naval men. I cannot see any possibility of any great inconvenience arising from differences between different members of the Board.

In his evidence before the Admiralty Committee of 1860 Sir Maurice Berkeley said:—

Maurice
keley.

The three senior Naval Lords should be entirely non-political. You should appoint them as you do the superintendents of the dockyards, or the admirals on stations, and should appoint them for a certain number of years. The three Naval Lords should be retained by each succeeding Government, and go out in turn.

I should like to see a permanent element of the Board of Admiralty.

miralty
minis-
tration.

The necessity for the adoption of the suggestions made by Sir Maurice Berkeley is sufficiently shown in the observations of Admiral Denman in his essay on 'Admiralty Administration':—

It is unnecessary to insist at any length on the evil of divided councils, which must often occur amongst six persons brought together by the chapter of accidents, without previous knowledge of each other's views; and, in fact, the Admiralty often represents nothing so completely as the endless diversity of opinion which prevails among naval officers; a diversity which, on the other hand, is partly accounted for by the absence of any standard course of policy to be discovered in the conduct of successive naval administrations.

In a period of not much more than thirty years, up to 1859, there were seventeen changes in the First Lord of the Admiralty, giving an average tenure of office to each of about one year ten months two weeks; and, during the same period, the total number of changes in those who have managed the affairs of the Navy, as members of the Board, and Secretaries of the Admiralty, amounted to 103.

The changes have occurred recently in a yet more rapid succession, for within the last eight years there have been four general changes of the Board with that of the Government, and there have been five First Lords, with thirty-four changes in all of members of the Board and Secretaries.

John
kington.

Sir John Pakington was the principal witness against the administration of the Navy with the assistance of a Board.

'I am inclined,' he said, 'to think that professional advice might be at the command of the Minister, without adopting the plan of a separate council, solely for the purpose of advice, by placing naval officers of eminence and power at the heads of the departments.'

The state of opinion with reference to the maintenance of a Board of Advice at the Admiralty may be summed up as follows:—

Witnesses in favour of a Board.

The Duke of Somerset
Sir James Graham
Sir Francis Baring
Sir G. Seymour
Admiral Bowles
Sir C. Wood
Sir M. Berkeley

Witnesses opposed to a Board.

Sir John Pakington
Sir J. Cochrane
Admiral Denman

The qualifications to be desired in naval officers appointed to serve on the Board of Admiralty, were described in the evidence of Rear-Admiral George Elliot:—

Admiral Elliot.

The great wants of the service are systematic views of permanent organisation, and a power working in the Admiralty constantly to grasp the scientific improvements of the day, and apply them to the service. To supply these wants, your naval administrators should be selected for their practical experience. . . . In fact, you should have a Minister of Marine, with naval officers at the heads of the departments, who could form a council to give advice to the Minister upon all the leading points upon which he might require to be informed; and they should have independent departmental power to carry out their own views, being responsible to the Minister for their acts in carrying out the details of the service.

I think there should be (and I feel very strongly on this point) another Lord of the Admiralty, specially appointed to overlook the construction of ships and fitting of ships. The position of Civil Lord of the Admiralty should be filled by a Naval Lord.

As to the introduction at the discussions of the Board of Admiralty of topics which are irrelevant or of inferior importance, his experience, which was not small, of the management of commercial business by means of Boards assured him (Mr. Brassey) that where the Chairman exercised a proper control no difficulty need be experienced on that score. As public opinion, whether wisely or not, seemed to associate the recent misfortunes of the Navy with the altered constitution of the Board, and to demand a revival of the old system of management which had never broken down in the hour of trial, he hoped it would be reconstituted with such modifications as might be desirable.

Action of Boards depends on chairman.

In France, the Navy was governed by a Minister of Marine, assisted by a Council chosen by himself. The Minister of Marine had absolute authority under the Chief of the State. He was assisted by a 'Conseil d'Amirauté' which he consulted, whose opinions were recorded; but the Minister acted on his own responsibility, and when he thought fit, disregarded its advice. Public opinion was unfavourable to this system, of which it had been said that profusion and confusion were synonymous terms.

French Conseil d'Amirauté.

In France, changes had not been less frequent than in England. The Duke of Somerset, in his evidence, taken by the Select Committee on the Board of Admiralty of 1861, said that 'since the year 1800 there had been forty-six Ministers of Marine in France, with an average tenure of office of fifteen months each. Of these eighteen were naval officers, and twenty-eight civilians.

Among the witnesses examined before the Duke of Somerset's

Evidence
as to posi-
tion of the
Controller
as a mem-
ber of the
Board.

Committee there was almost complete unanimity of opinion against the elevation of the Controller to the Board.

The following evidence was taken by the Committee of 1861 on the Board of Admiralty :—

Rear-
Admiral
G. Elliot.

Rear-Admiral G. Elliot: The duties of the Controller are quite sufficiently laborious without his being at the Board to represent his department there.

The duties of the Controller are so laborious, that he has neither time to attend the Board meetings, nor to go about to the dockyards and see what is going on, as he ought to do; nor has he time to inquire sufficiently into inventions and improvements. The Controller would have plenty to do in carrying out the details of his office, acting upon the instructions he receives from the Minister, as a subordinate of a department, through the department Lord.

Sir Michael
Seymour.

Sir Michael Seymour: To give the Controller a seat at the Board would be to run away with a great deal of valuable time. I think that, provided the Controller has the power—which of course he has—of communicating with the Board whenever he thinks it necessary, that is sufficient

Sir C.
Wood.

Sir C. Wood: The great evil of the Navy Board is its independence. The fact that the Board of Admiralty could not control the Navy Board, was the real reason of its being abolished; and I think it would be a great misfortune, either to reconstitute the Navy Board or to create an independent Controller or Surveyor.

Sir James
Graham.

Sir James Graham: The Navy Board fulfilled the principal duties, if not the whole of the duties, now conducted by the Controller.

They had control of the dockyards, very much as the Controller now has, but with this difference, that the Controller acts under the direct orders of the Admiralty, while the Navy Board acted as an independent Board—with a most voluminous correspondence with the two Boards; the Navy Board being thus indirectly under the imperfect control of the Admiralty.

In 1832 the Navy Board and the Victualling Board were abolished, these departments being consolidated under the Admiralty.

Opinion of
Sir Spencer
Robinson.

In the paper prepared by Sir Spencer Robinson in 1867 the elevation of the Controller to the Board was recommended; but with due deference to so great an authority, he ventured to think that recommendation a mistake, and that the best course would be to appoint an additional Lord to the Board, whose especial duty it should be to superintend the dockyards.

Controller
over-
worked.

It had been admitted by many most competent naval authorities, among them the Duke of Somerset, that it was impossible for any one individual, however great his ability, to discharge with efficiency the great amount of work which fell to the share of the Controller. Sir Spencer Robinson had expressed a different opinion; but the disclosures recently made before the 'Megæra' Commission showed

that the superintendence of the dockyards by the Controller was not so efficient as could be desired.

Under the Orders in Council the custody of the Store Department was added to the heavy catalogue of the duties devolving on the Controller, while at the same time he was raised to the position of a member of the Board. These changes threw a large amount of additional work on the Controller; while at the same time the staff of the Store Department was reduced, the place of Chief Engineer was abolished, and the former second in command, with the insignificant title of engineer assistant, and the trifling addition of 50*l.* to his former salary of 550*l.*, became the Controller's chief adviser in the Steam Department of the Navy.

New duties
of Con-
troller.

To relieve the Controller of a portion of his duties it would be desirable to appoint a standing Committee on Naval Inventions and Designs. Such a Committee was strongly recommended by Admiral Elliot in his evidence before the Committee of 1861. It would enable the Admiralty to consult competent advisers on difficult questions, which were continually arising, while maintaining the responsibility which properly belonged to that department.

Committee
on Design.

Relief might be given to the Controller, in his capacity as shipbuilder of the Navy and manager of the dockyards. The advice of a naval officer was required to control in a general way the *matériel* of the fleet; but it by no means followed that the Controller, who had had the training, not of a shipbuilder, but of a sea officer, should be required to become, as if by a wave of the enchanter's wand, a practical shipbuilder.

Shipbuild-
ing ad-
ministra-
tion of the
Controller.

It was said by Admiral Elliot in 1861 that the best qualification for the Controller was recent experience on active service at sea. But if the Controller was to become the practical manager of the yards, he should serve a long apprenticeship in that capacity, and during the period of his novitiate he must mainly be dependent on the advice of his subordinates. A frequent change in the person holding the post of Controller would, therefore, be undesirable; but, on the other hand, if he remained in office too long the great advantage of recent experience at sea would be lost. The only escape from this dilemma which he could discover, was to relieve the Controller from the direct and immediate management of the yards by appointing a practical shipwright, who would take charge of that department under the general supervision of the Controller.

The Committee of 1860 had said that if the dockyards were frequently visited by a practical shipwright and engineer officer, representing the Surveyor of the Navy, it would be attended by

Committee
on dock-
yard econ-
omy, 1860.

Personal
inspection
of dock-
yards.

many beneficial results: orders would be interpreted aright and more strictly carried out; better judgments would be formed of persons fit for promotion, and the energies of the officers more advantageously drawn forth.

The Committee of 1860 laid stress on the necessity of securing a more strict compliance on the part of the dockyard people with the orders of the Admiralty, and on the advantage of possessing better means of forming a judgment of the persons most fit for promotion. These were important objects. The private employer was able to watch closely the progress and capabilities of the workmen in his employ, and so to promote them with much greater confidence than could possibly be felt by the political head of an administrative establishment, who had not the same opportunities of close and constant personal supervision, and who seldom continued in office long enough to gain a personal knowledge of his staff. If a permanent head of the shipbuilding department were appointed, he would be able to give to the Admiralty the same valuable advice, for the promotion of civilians in the dockyards, which the Admiralty now received from their naval advisers with regard to the promotion of officers in the military branch of the service. It would rarely be possible to induce men of high position in the commercial world to enter the Admiralty service. Competent men for the higher appointments in the dockyards must therefore be trained in those establishments. For the peculiar task of managing a dockyard, the service itself would generally afford the most satisfactory training.

Surveyor
of the
Navy.

A Surveyor of the Navy, a high civil officer acting under the Controller, might render service to the Admiralty in other ways. Considering how frequently political accident led to changes at the Admiralty, there would be a great advantage in having a permanent officer responsible for details, and whose presence at the Admiralty would be a guarantee for the continuity of the system of management in the dockyards. The recommendations of Admiral Smart's Committee were recognised as valuable by the then Board of Admiralty; and the Duke of Somerset proposed to appoint a second assistant constructor; so that by having two officers of that rank it would be possible that one or other of them should be always absent from Whitehall engaged in paying personal visits to the dockyards.

Distinction
between
naval
architec-
ture and
dockyard
super-
vision.

He did not think it altogether judicious to entrust the management and inspection of the dockyards to the Chief Constructor of the Navy. A Chief Constructor ought to be selected for his talents as a naval architect; but a naval architect might not be a good

manager of large bodies of artisans, and might have little inclination to deal with those dry details upon the skilful manipulation of which economical management depended. In railway administration there was a broad distinction between the qualifications of the engineer who designed and those of the contractor who executed the works. It seemed clear, therefore, that it would be an advantage to appoint an additional officer on the staff of the Controller, having the rank of a principal officer of the Navy, whose sole business it would be to superintend the building of the ships from the designs prepared by the Controller, and to watch over the general management of the dockyards.

In conclusion, he confidently asserted that the more completely we adopted in our dockyard management the system of decentralisation combined with strict and close supervision on the part of the central authority, the more completely we should insure the efficiency of the British Navy.

Decentralisation.

Mr. SAMUDA: . . . He agreed with the hon. Member for Hastings (Mr. T. Brassey), that many changes might most advantageously be introduced. A very great error was made when they got rid of Mr. Lloyd, the Chief Engineer. The whole security and safety of the Controller depended on that officer and the Chief Constructor. The Controller should be fortified with the very best engineering assistance, for they were in such a state of change as probably no previous age had seen. For upwards of 100 years the work of the Admiralty was comparatively trifling, but now no sooner was a ship built than her plan of construction had to be reconsidered, to meet the requirements of the rapid progress that was made, meanwhile, in artillery. Mr. Lloyd had been replaced by his assistant, able, no doubt, but very inferior in practice and general position. They had also got rid of Mr. Reed. He did not think Mr. Reed had on all occasions been absolutely correct, but he endeavoured to bring forward that general, comprehensive, and continuous improvement that the progress of science was continually necessitating, and for which the Admiralty was greatly indebted to him; and no one should succeed him who did not possess the very highest qualifications. It was impossible to think of filling his place by a Committee, though the First Lord might strengthen himself with considerable advantage by acting on these suggestion of the hon. Member for Hastings, and have a permanent Committee to advise him, not upon mere inventions, but upon actual designs; and such a Committee, in conjunction with the Chief Constructor and Chief Engineer, would enable him to go on improving our ships. Then, again,

Mr. Samuda.

these officers ought to be of a permanent character; it would be a misfortune that they should be changeable at short intervals. One fact ought never to be lost sight of, and that was that a dockyard was a gigantic factory, demanding energetic supervision from permanent chiefs who thoroughly understood the business they had to direct, and who certainly ought to hold their positions for a certain number of years. Attention to these points would, he hoped, maintain for our Navy the supremacy it had held in the past.

Mr. Childers.

Mr. CHILDERS: . . . Turning to the subject of the dockyards and their superintendence by the Controller, I may say that I listened to the speech of the hon. Member for Hastings (Mr. T. Brassey) with great interest, and that with many of his recommendations I cordially agree. In the first place, I fully admit that I think that my right hon. friend will agree with me upon the fact that the Controller's office is under-manned. The arrangements respecting the Controller's office were very carefully considered by me, in conjunction with the late Chief Constructor, and I was ready to appoint an assistant if they had required it; and I still think that such appointment should be made. With regard to the Engineer's department, I do not think that we made a mistake in bringing it under the control of the Constructor of the Navy. I also agree with the hon. Member as to the insufficiency of the salary paid to the engineer under the Constructor; and I should like to see it raised. The fact is that, in my opinion, we give all our professional officers too small salaries. There are, doubtless, many Government departments where there is a redundancy of officials, whose numbers might be reduced with advantage; but at the same time, the majority of our great engineer officers are underpaid, and I trust that my right hon. friend (Mr. Goschen) will be able to persuade the House that it is for the advantage of the public service that some of these salaries should be raised.

Mr. Goschen.

Mr. GOSCHEN: . . . My hon. friend the Member for Hastings spoke of a superintending Lord over the Controller; but by the arrangement which he had suggested there would have been a Deputy Controller, and there would have been two superintending authorities to one actually working authority. I agree entirely with my right hon. friend the Member for Pontefract, that the Controller should be an officer so high in position at the Admiralty that he should be held responsible for the work he does, and that his responsibility should not be diminished by passing through a superintending Lord. The one point I consider absolutely essential in the Controller of the Navy is that he should be an officer appointed for a fixed term

of years. One of the great difficulties of administering by a fluctuating Board is that you do not get sufficient permanence in the highest officers. . . .

We have heard to-night of the very great difficulties attending the work of the Controller, and on this head I may say I agree very much with the remarks of my hon. friend the Member for Hastings.

With respect to the labours and position of Controller, the fact is really this: he is not only nominally responsible, but has to perform work almost beyond the powers of any one man. The great abilities and industry of Sir Spencer Robinson and Mr. Reed produced this result: they tended to draw into the hands of the Controller nearly the whole of the intelligent work of that department. They liked to do as much as they possibly could of the work of the department; and thus an amount of labour not only of thought, but of detail, was thrown on the Controller, with which even a man of superior capacity found it difficult to grapple. It will therefore be a satisfaction to us to relieve the Controller of a great portion of routine work, which ought not to be performed by a man whose brains would be more profitably occupied in attending to larger questions in the interests of the public service. We therefore propose to appoint a Deputy Controller who shall also have the title of Director of Dockyards, and whose special business it shall be to attend to the official working of the dockyards, and to deal, without reference to the Controller, with most of those questions which touch merely the administration of the dockyards. In that way we hope to relieve the Controller of a large portion of the laborious duties, and, at the same time, to ensure the more effectual working of the dockyards.

LETTERS, PAPERS, AND ADDRESSES.

SECTION V.

RECENT NAVAL ADMINISTRATION.

- I. REPRINT OF A PAMPHLET, PUBLISHED IN 1872.
- II. ADDRESS DELIVERED AT HASTINGS, 1875.

RECENT NAVAL ADMINISTRATION.

*A Review of the Situation in 1872.**Originally published as a Pamphlet.*

Importance
of the Navy
to the
British
Empire.

IN the wars which have lately desolated some of the fairest regions of Central Europe, the relative naval strength of the belligerents has had little effect on the issue of campaigns. Hence there may have been a tendency to underrate the importance to our own country of her naval resources. It must, however, be borne in mind that we are an insular and not a continental people, and that no invading army can reach our shores until we have been deprived of the command of the seas. The imaginary battle of Dorking could not have been fought unless the British fleet had been destroyed by torpedoes; and we need only ascend to the days of our grandfathers to see how the authentic events of history confirm the hypothesis of fiction. At Boulogne, in 1805, Napoleon, with an army of 200,000 men, assembled to invade, and, as he firmly believed, to conquer England, was condemned to hopeless inaction; because Villeneuve, after his escape from Toulon, was so closely pursued by Lord Nelson in a chase of memorable persistency, and so bravely fought by Sir Robert Calder, that he was compelled to take refuge in Vigo Bay, having failed to secure, even for 24 hours, the command of the English Channel. But a Navy is invaluable to England, as well for the defence of the country, as to protect our interests abroad. The recent abrogation of the stipulations of the Treaty of 1856, which imposed a limit on the naval development of Russia in the Black Sea, may be followed at no distant date by other demands.

As an Asiatic and a colonial Power, we are deeply concerned in the fate of the Turkish Empire and its dependencies; and, while our fleet remains supreme in the Mediterranean, our communication with the East cannot be intercepted. Further general arguments, in support of a liberal appropriation of the national income to the maintenance of the Navy, can scarcely be required.

Mr. Childers.

The career of Mr. Childers at the Admiralty will fill a notable

page in the history of our naval administration. He will be remembered for his independence of obsolete tradition, for his unflinching devotion to public duty, for the invigorating influence of his personal example throughout the service, especially in the civil departments, and for the large, and in many respects judicious reductions which he effected in our former naval expenditure. The maintenance on foreign stations of numerous cruisers, but ill adapted for modern warfare, involved the country in serious expense, without adding to our influence and prestige. Irrespective of the diminution of force, considerable economy has been obtained by the creation of the purchase department, and the adoption of commercial principles in the business transactions of the Navy. The practical result of the new system may in some degree be ascertained, by comparing the cost per man of victualling and clothing the Navy under the most recent naval administrations :—

Comparative cost of victualling.

Year	First Lord	Seamen and Marines	Vote for Victualling and Clothing	Amount per Man
1866-67	Duke of Somerset . . .	68,400	£ 1,235,188	£ s. d. 18 1 2
1867-68	Mr. Corry . . .	67,300	1,241,614	18 0 0
1869-70	Mr. Childers . . .	63,300	1,172,268	18 10 4
1870-71	Mr. Childers . . .	61,000	968,857	15 17 7
1871-72	Mr. Goschen . . .	59,800	1,038,202	17 7 2

In 1870-71 we observe a considerable reduction; but in moving the naval estimates Mr. Childers took care to explain that it was really only 178,000*l.*, and that there was a redundant store of clothing. A reduction so obtained could not be permanent, and in the following year there was, as might have been expected, a considerable addition to the estimates.

From the figures which have been quoted, it appears that while extravagant prices may have been paid for anchors, cables, sperm oil, and the like, the general cost of the supplies under the old *régime* had not largely exceeded their market value. The extravagance of former naval administrations, so severely and justly condemned by public opinion, was caused, not so much by the greater cost of dockyard in comparison with contract work, as by continual alterations of ships while on the stocks, and by expensive and injudicious repairs.

Dockyard extravagance exaggerated.

Mr. Childers was scarcely patient enough in introducing organic changes in every department of the Admiralty. The uncertainty of official life suggests a reason why an able and energetic Minister is sometimes tempted to undertake a difficult task, without first sitting

Precipitate changes.

down and sufficiently counting the cost. The Admiralty has perhaps suffered more than any other great department of the Government from frequent Ministerial changes. In 1866 the Duke of Somerset was First Lord, and in the short interval of time which has since elapsed Sir John Pakington, Mr. Corry, Mr. Childers, and Mr. Goschen have rapidly succeeded him in an office which cannot be filled with satisfaction either to the Minister himself, to the Navy, or to the country at large, without considerable experience in its multifarious and difficult duties. Of all the statesmen included in the above enumeration, Mr. Corry alone has concentrated his powers, throughout a long and useful career, on the administration of the Navy.

As in the reorganisation of the Admiralty, so in the dismissal of many important officers, Mr. Childers made numerous and rapid changes. The Constructor's department must have been disorganised by the almost simultaneous resignation of Sir Spencer Robinson and Mr. Reed. The appointment of a Royal Commission makes it premature to suggest explanations; but it is clear that independence of conduct and character, and the authority, which experience alone can give, are essential to our permanent officials.

Impolitic
to break
up a staff.

The dismissal of heads of departments, if intended as a measure of economy, is a mistake. The closing of an unnecessary dockyard and the reduction of our foreign squadrons must largely diminish expenditure; but the salaries of a small superintending staff are a trifling addition to the estimates during peace, while their skill in dockyard organisation and familiar knowledge of the war requirements of a Navy give unlimited power of expansion, should any emergency arise. In commercial life it would be deemed a suicidal policy to break up the tried and well-trained staff of an establishment, whenever a lull occurred in trade.

Underpaid
officers.

The subordination of every department connected with the *matériel* of the Navy may have been an administrative improvement; but, whatever his rank in relation to the Chief Constructor, a skilled mechanical engineer must be absolutely indispensable at Whitehall. An officer is surely required, not inferior in knowledge, experience, and professional status to the managing partners of our leading engineering firms, to take charge of the complicated and costly machinery of our ships of war. The sum of 334,690*l.* has been voted for the purchase of machinery in the current financial year; yet the head of the steam department of the Admiralty is called 'an engineer assistant,' and receives a salary of 600*l.* a year.

A similar objection applies to the constitution of the purchase

department. When this branch of naval business was entrusted to Mr. Baxter, it would appear to have been taken for granted that his commercial experience would enable him to conduct the more important transactions without professional assistance. The permanent head of the department was accordingly regarded as a comparatively subordinate officer, with a salary proportionate to his limited responsibilities. But the exigencies of Ministerial etiquette no less than the caprices of popular favour made it impossible for Parliamentary officials to count on a long term of office. Mr. Baxter has already shared the varying fortunes of his colleagues ; and his successors will rarely possess a special knowledge of the quality or price of naval stores.

Before Mr. Childers took office, the Board of Admiralty consisted of a First Lord, four Naval Lords, and a Civil Lord, with a Parliamentary and a Permanent Secretary. Under Mr. Childers, the Board was composed of a First Lord, a First Naval Lord, a Second Lord and Controller, a Junior Naval Lord, and a Civil Lord, with a Parliamentary and a Permanent Secretary, as before. The First Naval Lord was made responsible to the First Lord for advice and action in matters relating to the fleet and the *personnel* of the Navy ; while the Controller was in like manner responsible for the construction and material of the fleet. As a consequence of the changes in the Board the naval element was reduced. While two Naval Lordships were abolished, the Controller had a seat in their stead. But when the Russian note arrived, Mr. Childers expressed his conviction that another Naval Lord should be appointed, thus clearly indicating an opinion that the reduced naval staff was insufficient to meet the pressure of war. A sea officer's career may be an indifferent education in naval architecture and shipbuilding, yet naval supervision is not the less essential to naval efficiency. The United States Navy has been recently surveyed by a board of distinguished officers. Their report gives ample warning against the undue suppression of the naval element. 'Of all the vessels visited not one,' they affirm, 'no, not a single one, is effectually fit in these times to cruise at large in war, or to cope with the cruisers now possessed by the more formidable Powers of Europe.' They attribute this state of things to 'the settled indisposition, until a very recent period, to invoke the experience of the Navy.'

Board of
Admiralty.

It was unwise to give the Controller a seat at the Board. The experience of commercial undertakings has shown the impropriety of making the responsible head of a department a member of the Board, under whose directions it is his duty to act. The administrative

must be subordinate to the deliberative functions ; and subordination and responsibility can no longer be preserved when the departmental officer becomes himself a member of the governing body. In order to exercise a strict supervision over the dockyards, a good permanent officer is required, subordinate to the Board of Admiralty, not co-equal in authority. This department should be placed under the charge of a member of the Board whose naval experience would enable him to exercise a valuable control over his professional officers. If this arrangement should hereafter be adopted, the office of Controller might be abolished; while the Chief Constructor, who should be a naval architect of eminence, would be raised, in accordance with the suggestion of Sir Frederick Grey, to the dignity of a principal officer, like the other principal officers of the Navy.

Mr. Childers abandoned the old-established practice of daily consultations with the members of his Board. The necessary information on professional matters may doubtless be obtained by a civilian First Lord, without having recourse to a formal Council ; but in the distribution of naval patronage the advice of a Board is almost indispensable. The Navy is of necessity a scattered service. An admiral may rise to the high dignity of First Naval Lord, and know nothing of officers who have not served under his own immediate command. The united experience of a Board will secure full consideration for the claims of every individual.

Mr. Gos-
chen.

Mr. Childers having been compelled to resign by ill-health, the result of excessive devotion to his public duties, a more judicious choice of a successor could not have been made. Mr. Goschen, while ready to consider every proposal for the improvement of the Navy, has wisely preferred to retain existing systems, even when theoretically imperfect, rather than make hasty changes, the value of which has not been distinctly established. He has also shown that which, in a civilian at the head of the naval service, is a great merit, a determination not to adopt *à priori* views on technical matters. On the other hand, when the exercise of authority has been necessary, Mr. Goschen has been equal to the occasion, and has not been deterred from doing his duty to the country by the disagreeable nature of his task.

General
organisa-
tion.

In consequence of the recent changes the organisation of the Admiralty has acquired an exceptional interest. Systems are in ordinary times of much less importance in their practical results than the abilities of those by whom they are administered. At the Admiralty, as in every department of the State, that which is best administered is best. The author has once recommended that the

Board of Admiralty should be abolished. Further reflection has convinced him that the change would not be expedient; and it becomes a duty to himself, unimportant as it may be to the public, to retract the opinion he once too hastily expressed.

Turning now to the *matériel* of the Navy, the subjoined comparative statement of the ironclad fleets of the principal maritime Powers may be examined with interest:—

Ironclad Ships.

	Ships	Guns	Tons	Horse-power
United States	54	133	64,710	—
North Germany	9	55	13,386	3,600
Italy	22	201	—	11,380
Russia	20	141	43,279	5,200
France	63	1,100	148,800	30,000
England	54	720	196,226	39,240

Including both armoured and unarmoured vessels, the tonnage of the British Navy is 666,000; of the French, 469,000; of the Navy of the United States, 186,552 tons.

In ocean-going ironclads our fleet is superior to the united navies of the world. But in vessels of moderate draught the comparison is less satisfactory. The Admiralty, however, have admitted the necessity of adding to the fleet of gunboats. The 'Cyclops' and three sister turret ships, drawing 15 ft. 6 in., and protected by armour of from eight to ten inches in thickness, are either completed or in progress. Objection has been raised to the designs both of these vessels and of the 'Devastation'; but a committee, composed of men eminent in science and officers of high naval reputation, has pronounced them to be safe and stable ships. The estimates for the current year provide for the construction of 15,512 tons of shipping. Of this total 3,712 tons, according to the programme laid down in the estimates, represent the addition to the flotilla of gunboats. A question has been raised as to the value for naval warfare of small vessels which can be sunk by a single shot; but the same objection could be urged against vessels of much larger size. To resist the formidable missiles of the most recently invented artillery, armour-plating is required of such weight and thickness that it could not, even if limited to the bow alone, be applied to a vessel of twice the tonnage of the 'Staunch.' An increase of tonnage may no doubt be desirable; though even in a seaway good practice can be made by well-trained gunners from the smaller gunboats of the 'Staunch' type. It is still more satisfactory to know that some of our most recent ocean-going ironclads have

elicited the highest approval of competent and impartial authorities. Captain Macomb, of the United States frigate 'Plymouth,' who accompanied the 'Monarch' on her voyage across the Atlantic, pronounced her to be 'the most formidable and effective ironclad vessel of war for ocean service in the world.' Our earliest ironclads, the 'Warrior' and the 'Agincourt,' are the finest sea-going vessels we possess; but their armour is easily penetrated by modern artillery, and they are too long to be handled under sail, or to attempt, with any chance of success, to ram an enemy of more moderate dimensions.

Mr. Reed.

Mr. Reed, who appreciated the disadvantage of the excessive length of the earlier ironclads, determined to try the experiment of shorter and handier ships. He believed that no loss of speed would result from reducing the length of the ships, provided that the same power in proportion to the area of the midship section were given to the shorter as to the longer ships. The event has fully justified his anticipation. In the shorter vessels, which Mr. Reed has designed, the same speed is obtained as in the longer ships; but they carry more powerful guns, and the armour is infinitely heavier than in the larger ships of his predecessors.

For the purposes of war the designs of Mr. Reed exhibit important improvements; but in sea-going qualities they are inferior to the longer and less heavily armoured ships. The most serious fault of the later ironclads is their uneasiness in a seaway. This fault is the inevitable result of the attempt to give to vessels of reduced dimensions the heaviest guns and an enormous weight of armour. Only ships of the largest size could support such prodigious burdens. To increase their stability, additional ballast has been placed in the most recent ships. It would have been better to have worked up more material in their frames and plating, and thus to have combined the advantage of greater stability with additional structural strength.

While Mr. Reed deserves much credit for the general excellence of his designs, it is certain that all his productions have not been equally successful. He has acquired in the office of Chief Constructor much valuable information; and it is, therefore, not a little disappointing that he should now be free to give to other nations the benefit of his dearly-bought experience. It seems difficult to understand why his past services should have been rewarded by the payment of a lump sum of 5,000*l.* instead of by an increase of salary, which would have been an inducement to remain at Whitehall.

The 'Captain.'

A general review of our recent shipbuilding operations would be imperfect without some reference to the loss of the 'Captain.'

The ship was capsized from carrying too great a press of sail in squally and boisterous weather. But the fact that she could not be allowed to incline to an angle, which in a high freeboard ship is commonly permitted under sail, is a proof that there was grave misapprehension as to the amount of stability which she possessed. The late Controller and Chief Constructor were but too well justified, as the event has proved, in pronouncing it impossible to give full sail-power with safety to low freeboard ships. The blame for the loss of the 'Captain' ought in fairness to be divided among a number of individuals, and nobody can be accused of having clearly foreseen the terrible disaster which actually occurred.

The lessons to be drawn from the disaster seem to be that full sail-power cannot be given to ships of the low freeboard type, and that the Admiralty should never allow the opinions of its responsible advisers to be overruled by an agitation out of doors. Public opinion on such a subject is based on imperfect information, and must therefore possess little value in comparison with professional experience.

Before the accession of Mr. Childers to office it had been too much the custom to keep our ships of war in harbour during winter. By that means no doubt ropes and sails were economised, but young officers had little opportunity of learning to handle their ships in gales of wind. By forming the Flying Squadron, as a school for seamanship, and by uniting the Mediterranean and the Channel Squadrons, for exercise in steam evolutions, new opportunities of learning their profession have been given to naval officers. It is not necessary that the flying squadrons should always be despatched to distant seas; although the experience to be obtained in a voyage round the world must be valuable to every sailor. Frequent practice in entering and leaving port may sometimes be more instructive than a long and monotonous passage across the ocean. It may be urged that the ships of which the Mediterranean Squadron has of late been mainly constituted could not have been kept at sea in winter, without exposing them to a strain which they were ill-fitted to bear. It would, however, have been better to have retained the wooden ironclads in the Reserve Squadron at home, and to have despatched the iron armoured ships to the Mediterranean.

It is desirable that the vessels selected for commission should be capable of being handled under sail. The flag-ship of an American Admiral is generally an armed auxiliary screw clipper. The Americans have shown themselves perfectly ready to throw tradition to the winds, and to adopt the most novel types, to meet the

The
Flying
Squadron.

changing exigencies of war ; but in peace they have wisely recognised the value of full-rigged ships. In his Annual Report for 1869, Mr. Robeson, the Secretary of the United States Navy, well observes that 'lounging through the watches of a steamer, or acting as firemen and coal-heavers, will not produce in a seaman that combination of boldness, strength, and skill which characterised the American seaman of the elder day. The habitual exercise by an officer of a command the execution of which is not under his own eye, is a poor substitute for the school of observation, promptness, and command, found only on the decks of a sailing vessel.' We have fortunately a numerous fleet, well adapted for purposes of instruction. We have 36 ships of the line, 27 frigates, and 22 corvettes. These vessels ought not to be recklessly condemned.

Mediterranean
Squadron.

The author would venture to suggest that in future no full-rigged ironclads should be sent to the Mediterranean in time of peace, but that a squadron of mastless turret ships should be kept in reserve at Malta. From their deep draught the 'Royal Sovereign' and the 'Devastation' are almost useless in English waters. In the Mediterranean, where there are few shoals, and the principal ports are accessible to vessels of any draught, they might be employed to greater advantage. On the line of communication between Gibraltar and the Suez Canal, to defend which in time of war would be the primary duty of our Navy, the facilities for obtaining a supply of coals are such that canvas is not absolutely essential. In the Mediterranean, again, the winds are variable and seldom blow long with sufficient force to propel a heavy ironclad, even at the moderate speed of five knots an hour.

As a general principle, it will be admitted that where sails are not indispensable, they are an incumbrance to a ship of war which is intended to go into action under steam. It is only in mastless ships that the advantage of the turret system can be fully developed, and in a purely economical point of view mastless turret ships have much to recommend them. It is not their least important merit that they require less than half of the crew of a fully-rigged ship of equal tonnage.

If a squadron of mastless ships were kept in reserve at Malta, the seamen of the Mediterranean Squadron could in the winter be exercised in the turrets, both in harbour and in the Malta channel. The crew of the 'Hibernia' could become the shipkeepers of the proposed reserve ; and accommodation for the crews of ships under repair in the graving docks could be provided in the vacant buildings in the victualling yard.

The recent misfortunes of the Navy must have strengthened the convictions of those who had already disapproved of a distinct class of officers for navigating duties. It has been urged in support of the present system that a special class of officers, whose attention is confined to navigation and pilotage, will acquire a degree of proficiency in those branches of the naval profession which cannot be attained by the executive officers, who have many other duties to perform. On the other hand, it must be admitted that, as the executive officers are, under the regulations of the service, made jointly responsible with the navigating officers for the safety of their ships, we ought to give them opportunities of acquiring practice in navigation in every stage of their professional career. The executive officers who were held responsible for running the 'Agincourt' on the Pearl Rock had probably entrusted their ships too much to the navigating officers. Nobody, who is acquainted with the rudiments of navigation, will suppose that any one of the four executive officers can have ascertained, even by laying a parallel ruler on the chart, whether the course suggested to the Admiral in command by the master of the fleet would take the ships of the inner line to a safe distance from the Pearl Rock. Yet, so long as the navigation is regarded as a mystery beyond the reach of an executive officer, and this appears to be the view of those who are opposed to any change in the present system, so long the adoption of the principle of non-intervention in all that relates to navigation will be a more or less general result.

The navigating officers.

The committee, appointed in 1862 to consider the position and duties of the master class, recommended that ten lieutenants should be allowed as an experiment to volunteer for staff duties. This suggestion has never yet been adopted, but the recent misfortunes of the Navy make it appear that the change proposed might prove beneficial to the service.

Captain Washington, the Hydrographer of the Navy, was a member of the committee of 1862. The abolition of a separate class of officers for navigating duties was strongly recommended in a memorandum which he appended to the report of the committee. He pointed to the fact that many young lieutenants, commanders, and captains do actually navigate the smaller vessels and gunboats which they command. He urged that to entrust pilotage and navigation to masters begets indifference to those duties in lieutenants and officers of the main executive branch; and, referring to the responsibility of the masters for steering a large ship of war in battle, he asked if it was conceivable that, when a steam ram was about to

give the stem to an opponent, the captain of the ram should delegate his authority to the master at that critical moment. 'This being so, should he not,' he asks, 'have a training for handling and steering his ship promptly under any emergency? Would he not feel far more confidence in himself had he passed through the grades of a navigating officer, and for some years had charge of the steering and conning of a ship? Very recent events point to this mode of warfare as likely to play a prominent part in any future action. Would it be wise, then, to wait until the time of need, before training our young executive officers to acquire that self-reliance and confidence which can only be gained by continual practice?'

After cruising for a short time in the Channel in a suitable vessel for instruction in navigation, executive officers would have no more difficulty in becoming proficient in navigation than in learning gunnery on board the 'Excellent.'

It is said that the abolition of the navigating class must involve an increase in the number of lieutenants, and that unless the number of captains be augmented, which is not desirable, the stagnation of promotion would be still more disheartening than at present. Might not this objection be met by giving inducements to officers to retire as commanders and lieutenants into the Reserve, which should be organised for the defence of the coast? The officers of the Coast Defence Reserve might receive the full pay of their rank, and ought to reside at the ports at which the men under their immediate command are enrolled. In consideration of the advantage of a settled home, and their comparatively easy duties in time of peace, they should only be eligible for promotion for services rendered during war.

Commanders and lieutenants might also find employment as representatives of mercantile houses abroad, as superintendents of packet stations, and in command of our great sailing clippers and mail steamers. When large subsidies are given for the conveyance of the mails, it is a question whether the mail service might not be performed with greater advantage to the public by the Royal Navy. The sum of 3,500,000*l.* was paid for the hire of transports during the Abyssinian expedition. The British Indian Steam Navigation Company received the enormous sum of 257,410*l.*, or 25*l.* 9*s.* per ton, for the hire of 10,114 tons of shipping for nine months and eighteen days; while the Bombay and Bengal Steam Navigation Company had actually offered to sell their fleet to the Government at 27*l.* per ton.

The education of naval officers is another important and difficult

subject. Is it perhaps unnecessary to reiterate opinions already expressed, but it will be well to insist once more on the importance of a Naval University. For this purpose the vacant buildings at Greenwich present unrivalled advantages. There is ready access from Greenwich to many large engineering establishments, and to the private shipbuilding yards on the Thames. The Royal Observatory, the Gun Factories and Arsenal at Woolwich, the Dockyard at Chatham, the School of Gunnery at Shoeburyness, the lecture rooms of eminent professors in London, are close at hand, and together offer advantages not to be obtained elsewhere. The Naval University should be open to officers of the merchant service, on passing a preliminary test examination. It may not be chimerical to hope that, by offering to the mercantile marine the same education which we provide for the Navy, a bond of union will have been established between the two branches of a great profession, which both in peace and war is invaluable to England. The tone of the one will have been raised, the sympathies of the other will have been enlarged, the jealousies which have too long divided them will have disappeared, when the officers of both services participate in the advantages of a higher training than they have hitherto received, and in the responsibilities and the honours, which belong to all to whom we look for the effectual protection of our shores.

In consequence of the recent changes in the distribution of power in Europe, the maritime supremacy of England is now more conspicuous than at any period since the peace of 1816. We no longer observe with anxiety the naval development of France. In the United States unnecessary expenditure on warlike preparations is steadfastly resisted. The statesmen of the North German Confederation have shown no disposition to incur the enormous expense of creating a fleet which might be regarded as a rival to our own. Our naval administrators may, therefore, proceed, with ample opportunity for deliberation, to organise a force for the defence of the coast, and to improve the reserve which we already possess for the general service of the fleet. With a good system of reserves, not only will our fleets be manned with a promptitude and efficiency not hitherto attained, but a considerable reduction will also be justified in the standing force in time of peace.

The improvement of our Navy may be to some among us a repugnant task, because associated in their contemplation with all the horrors of war; but the English patriot will desire to maintain the naval supremacy of his country, as the only reliable guarantee, in anxious and threatening times, for the integrity of his native land,

and as an instrument, in the hands of generous and far-seeing statesmen, for the preservation of peace and the progress of civilisation.

M. Lamy,
1878.

The foregoing paper is included in the collection introduced in the present publication, because it contains many opinions to which adhésion is still unreservedly given.

With reference to the administration of Mr. Childers, the lapse of time serves but to strengthen the Compiler's conviction that the general course of policy was in the right direction, though pursued perhaps with too much vigour. No higher testimony could be given to the excellence of the work actually accomplished by Mr. Childers than that of M. Lamy, the ablest independent critic in the French Chamber on questions of naval administration. In his speech in 1878, M. Lamy said :—

‘En Angleterre, en 1859, la marine semblait pencher vers la décadence ; le conseil d’amirauté paraissait sans vigueur ; les créations de matériel étaient médiocres, les frais généraux écrasants, les budgets mal ordonnés, la comptabilité incomplète, et l’on pouvait dire en pleine chambre des communes que l’amirauté laissait échapper chaque année entre ses doigts plus de 1 million de livres sterling sans qu’elle s’en aperçût.

‘Ce fut, comme aujourd’hui, au retour du parti libéral au pouvoir que les chambres et l’opinion publique s’unirent pour combattre le mal. Une grande enquête fut ouverte par le Parlement, et comme il arrive presque toujours quand une œuvre doit réussir, il se trouva un homme qui se l’incarna et eut le désir de l’accomplir.

‘M. Childers, pendant huit ans, dirigea tous les travaux, contrôla tous les résultats, assit solidement, par le temps et l’étude, une grande réforme, et il ne prit enfin le pouvoir que pour l’accomplir.

‘Grâce à cet effort, l’Angleterre possède aujourd’hui la flotte la plus puissante ; elle a les arsenaux les plus économiquement entretenus, la comptabilité la plus simple et le personnel le mieux payé et le plus heureux.’

ANNUAL ADDRESS TO CONSTITUENTS.

Delivered at Hastings, January 22, 1875.

THE late Administration deserves the grateful appreciation of the country, for a greater amount of excellent work than has been accomplished in an equally short space of time within the remembrance of the present generation. They have made earnest efforts to reduce our growing expenditure. The task was alike difficult and thankless, and the difficulty was increased, as I feel bound to confess, by an injudicious parade of their intentions in this regard, which made all whose interests were in any way affected predisposed to complain of ungenerous treatment.

Reductions
of expendi-
ture.

Notwithstanding the reductions effected by the late Administration, the sum we expend on the Navy largely exceeds the expenditure of any other naval Power. Our naval estimate is four times that of Germany, and Germany is now regarded, not without reason, as a most important naval Power; while, if we turn to the United States, which, whatever may be the actual condition of their Navy, would undoubtedly prove, in any protracted war, our most powerful naval antagonist, we again find that our expenditure is more than double the amount voted by Congress for the American Navy. It cannot indeed be doubted that if we were able to pursue the same policy which is adopted in Germany, and our whole expenditure were concentrated upon our ironclads, we should exhibit an incontestable superiority in that special class of vessels. Why is it that, with an expenditure by comparison so great, we apparently fail to get value for our money, and to maintain a naval ascendency in proportion to our outlay?

Compara-
tive ex-
penditure
of Naval
Powers.

The explanation is to be found in the greater cost of our iron-clad ships individually, in the large expenditure on wooden ships, constructed to perform the miscellaneous services commonly called the police of the seas, and in the greater number of seamen and marines which it is the policy of this country to maintain in time of peace.

Our iron-clad fleet.

With these heavy demands on our resources, we have undoubtedly failed to produce so many armoured vessels as the country might otherwise have been entitled to expect. But I am not prepared to admit that a comparison of our own strength with that of other Powers, even in respect to ironclads, is so unsatisfactory as it has been represented. In moving the estimates last session, the First Lord of the Admiralty made a discouraging report to Parliament of the condition of the fleet. The country was alarmed by his statement; but what did he propose in order to place the country in a proper state of defence? The number of men originally proposed for the dockyards in 1874-75 was 14,300. He added 695 to their number, and he made a saving on the vote for stores. If an alteration so slight was sufficient to allay the alarms of the present Administration on coming into office, I must say that those alarms would appear to have been altogether groundless and unreasonable.

Our naval supremacy.

When we proceed to examine closely the alleged inferiority of our own country, it will be evident that there is no just reason for apprehension. Russia, France, Germany, and the United States, are the only Powers which can be regarded as maintaining a Navy for other than strictly defensive purposes. It is certain that England is equal to any three of these four Powers; and the contingency of their being united in an offensive alliance against this country is too remote to be seriously entertained. Naval strength, moreover, must be measured, not merely by the actual condition of the fleet, but by the capabilities of the several Powers to make additions to their naval force. From this point of view, the United States must be regarded as our most powerful rival; but the resources even of the United States are much inferior to our own. We have hitherto been shipbuilders for all the other Powers in Europe, and the experience and resources of our private yards, if absorbed exclusively by the British Government, would rapidly supply us with a fleet which could defy the world. As our shipbuilders would furnish us with ships, so our merchant service should supply the Navy with seamen. These vast resources, both for building and manning a war Navy, must be properly organised. Let it not, however, be supposed that the strength of England consists mainly in her unused and undeveloped resources. In actual preparation we hold an incontestable superiority. The public has been alarmed by the reports of the Russian ship 'Peter the Great.' But that ship is still far from completion. The condition of the Navy of the United States has been described by their most competent authorities as deplorable. In France it has been determined to make such reductions in the naval

expenditure as to render it impossible to make any considerable additions to their ironclad fleet.

Special attention has of late been drawn to the growth of the German Navy. The entire programme, which is to be completed in 1882, includes the eight first-class ironclads already built, eight armoured corvettes, of which two are built, twenty unarmoured vessels, of which thirteen are completed, two monitors, and fifteen torpedo boats, of which three are completed, and three are building.

Laying aside therefore all groundless alarms, what should be the policy of British naval administrators in regard to shipbuilding? I quite agree with those who refuse to be content with a fleet on paper. It is neither statesmanlike nor honest to put forward fictitious statements of strength. It is certain that many ironclads belonging to other Powers, which are included in the enumeration of their fleets, are unfit for service; but, for ourselves, let us take care to maintain all ships in perfect order. Speed is one of the most essential qualifications of a man-of-war. A fighting ship with worn-out boilers is for many purposes *hors de combat*. It is admitted that many of our ships require new boilers, and, whatever be the cost, the work must be promptly done. It is the duty of the Admiralty to make a thorough investigation of the causes of this rapid deterioration. I cannot but ask myself whether it is not possible that among the engineers of the Navy there will be found a certain number who, however proficient in theoretical knowledge, are wanting in practical experience; and whether it may not sometimes occur that boilers are entirely renewed which might have been made efficient with partial repairs.

Our own
shipbuilding
policy.

Speed
essential.

I have shown, as I hope, that there is no immediate occasion for misgiving as to the comparative strength of our Navy. On the other hand, it is true that a certain number of our ironclad ships, built at the time when armoured vessels were first introduced, are worn out or have become obsolete. I am quite prepared to support a temporary increase of expenditure for the purpose of replacing these ships with ironclads of more modern type. The country is well able to bear any necessary outlay for this purpose, and, looking at the inferiority of our army to the military forces of the continental Powers, it must be admitted that our claims to rank as a first-class Power will be forfeited if we fail to maintain our maritime ascendancy. But, while I am prepared for some increase in the vote for shipbuilding, I am not prepared to sanction proposals for building ships of the costly type which some naval constructors recommend. The best type for a fighting armoured cruiser, as distinguished from an armoured coast-

Moderate
dimensions.

defence vessel, is still in debate. Many of our highest authorities are beginning to question the value of armour, considering that it is impossible for any armour to resist the artillery which is now being constructed. In the French Navy the course of opinion is no longer running in favour of armoured ships. It is given as a reason for not enlarging the programme for the construction of armoured ships for the German Navy, that it is desirable to await the result of our experiments before proceeding with a vast outlay on ships which may be condemned as obsolete in a few years. The United States have hitherto abstained altogether from building sea-going ironclads; and when we know that the stoutest armour we can employ will not suffice to resist our heaviest guns, and that armour is no defence whatever against the two most dangerous weapons of modern warfare—I mean the ram and the torpedo—enough has been said to show that it cannot be wise to spend 500,000*l.* in the construction of armoured ships.

The German fleet contains the most powerful ironclad vessels for cruising purposes in any foreign Navy. They have one ship which has cost more than 500,000*l.*, but their other vessels are of smaller dimensions, and their next most thickly armoured ship has a displacement of 6,000 tons, as compared with the 9,595 tons of the 'König Wilhelm.' Naval architects are in the habit of putting before us designs for ironclads of enormous strength and speed. We cannot but admire these displays of their science and ingenuity: but when we have before us the probable development of the powers of attack by means of torpedo boats, I question the policy of throwing all our eggs into so few baskets. He is the most practically successful naval architect for purposes of war, who can combine the greatest amount of offensive and defensive power with moderate dimensions and reasonable cost. If the Admiralty should feel justified in limiting the dimensions of our ironclads to 5,000 tons, and the cost of each ship to 250,000*l.*—so that, for an equal expenditure, we should have two ships in lieu of one, two 'Shannons' for one 'Inflexible,'—I should say that they were imposing a wise restriction on the creative fancy of the ship-building department.

Our unarmoured shipbuilding.

I have already alluded to the expenditure on the unarmoured classes as an explanation of the small appropriation from the amounts voted under our naval estimates for the construction of ironclads. At the present time England has of unarmoured ships 132, France 52, Germany only 17, and we have in addition 170 gun-boats and despatch-boats. A return in July last shows that we had 52 more vessels of the same class building or ordered to be built in the year

1874. With our vast colonial possessions, and busy maritime commerce, we are called upon to maintain a fleet of this description, such as no other naval Power is required to send forth. The vast expense thus involved may in a certain sense be regarded as an insurance effected upon our commerce, which is indirectly recouped to the nation; and, so viewing it, we may be the more reconciled to an increased expenditure for our Navy. But it is a question whether we have not gone somewhat beyond the necessities of the case. Mr. Childers wisely reduced our foreign squadrons, and more may be done in the same direction.

The British merchant Navy may be made a powerful auxiliary to the fighting Navy. The Cunard and other companies would furnish a matchless fleet of ships of the 'Alabama' class, but capable of steaming at far higher rates of speed, and carrying coals for a much greater distance. The Germans look to their lines of Atlantic mail steamers as a valuable reserve for the Navy, and our immense resources in the same class of ships should be taken into account before we proceed with the construction of large and costly additions to our unarmoured Navy. We are paying to the Peninsular and Oriental Company an annual subsidy of 500,000*l.*, and the company is under no obligation to furnish a contingent to the Navy in time of war. So large a subsidy should not have been granted without imposing some conditions for the greater security of the nation.

Mercantile
auxiliaries.

Having said so much as to the ships of the Navy, I cannot dwell on the important question of reform in the Admiralty in London. The great fault of our dockyard management is the excessive concentration of authority in the Controller's office at Whitehall. The consequence is that the Controller is overworked, and that his subordinate local officers have not sufficient encouragement to exert their inventive faculty to economise expenditure in the dockyards. The other Lords of the Admiralty, and especially the First Sea Lord, are almost as much overworked as the First Lord himself. As advisers upon naval policy, the Sea Lords of the Admiralty should have more time at their disposal for calm consideration and consultation with one another. To every Sea Lord a naval secretary of the rank of post captain should be appointed, to whom should be remitted the charge of the entire routine of the department. The Sea Lords would thus be relieved of an infinity of details, and be better able to attend to greater questions.

Board of
Admiralty.

In the dockyards, the officer at the head of the shipbuilding department, who bears the entire responsibility for the cost and workmanship of the vessels built under his supervision, is not sufficiently

Dockyard
officers.

recognised. The office of Master Shipwright should be gradually advanced in dignity and responsibility. The civil managers of the dockyards, when they do their duty, are as well worthy of the honour of knighthood as any class of persons in the Queen's service. With the prospect of distinction, and an appropriate relative rank with the officers of the Royal Navy, the post of Master Shipwright, under a more suitable designation, would attract to Her Majesty's service the ablest shipbuilders in the country. The advancement of the office does not imply any derogation from the authority of the admiral superintending, who would remain equally indispensable, as the local representative of the Admiralty, as the medium of communication with the Board, and as a superior consulting officer on all questions of equipment for the sea service and for naval warfare.

Manning
the Navy.

I have referred to the strength at which the *personnel* of the Navy is maintained. In the Navy Estimates, as it was pointed out by the Committee of 1858, every vote is influenced by this consideration, as the number of seamen involves a corresponding increase in the force of ships, and in the expense of bringing them forward for service. Our expenditure from this cause is incomparably greater than that of any other Power, as the following figures will conclusively prove. Our force of officers and men, including marines, is 60,000; that of Germany may be estimated at 7,000 of all ranks, including 4,500 seamen; that of the United States at 10,600, including 1,200 marines. It must be remembered that a large *personnel* entails not merely a heavy expense in pay and provisions, and in the repair and fitting out of ships, but a large vote for pensions. Our expenditure for half-pay and pensions absorbs nearly one-fifth of the entire amount appropriated to the naval service. It is therefore a question of supreme importance whether it is essential to maintain so large a *personnel* in time of peace. The Germans have four admirals on their lists, we have fifty; they have forty-one captains, while we have a hundred and fifty.

It will be objected that there is a deficiency in the supply of good seamen for the merchant service. I can only say that I have never experienced any difficulty in obtaining good seamen, and that I do not offer higher wages than are now being paid in many branches of the mercantile marine. Some of those from whom the complaints of the deficiency of seamen proceed have little right to expect to command the services of valuable men. The wages offered in the sailing ships proceeding on long voyages compare unfavourably with those paid in steamers on shorter and less arduous voyages, and are much below the earnings of tolerably skilled artizans on shore.

The system of engaging large crews for a long voyage at a moment's notice is not well calculated to secure the services of desirable men. In what other trade would an employer expect that he could secure forty skilled men at a moment's notice? In other occupations, employers, rather than allow a body of good workmen to disperse, will give them employment, even at a temporary loss to themselves. In the Navy it is the continuous service system which has so greatly improved the *personnel* of the fleet. Shipowners will be compelled to imitate the continuous service system of the British Navy, as the only means of securing good crews.

It may, however, be the case that, whatever be the advantages held out, a sufficient number of qualified men could not be obtained to raise the Reserve to such a strength as would justify some reduction in the *personnel* permanently attached to the Navy. It may also be assumed that men cannot be as well trained in the merchant service as in training ships under the direction of the Admiralty. Hence it may be considered advisable, from a national point of view, to grant a subsidy to the training ships, which the shipowners are now so anxious to see established, in order to provide the merchant service with the supply of seamen they require.

Training
ships for
the Re-
serve.

Such, at least, was the opinion of the Royal Commission on Unseaworthy Ships; and I sincerely hope that their recommendations may be adopted by the Government. For the Naval Reserve it would be a great advantage that all the boys, on leaving the training ship, should pass through a short term of service in the Navy, and if they cannot be distributed in sea-going ships, where perhaps some difficulty is already experienced from the extreme youthfulness of the crews, brigs might be attached to the training ship, commanded by naval officers, similar to those attached to the training ships at Portsmouth and Plymouth. It must always be remembered that, however large the *personnel* in time of peace, it can never suffice to meet the emergencies of war. The war Navy of 1810 was manned by 113,000 seamen. The peace Navy of 1817 was reduced to 13,000. If such expansions of the Navy are necessary in war, it is only by drawing seamen from the merchant service that our ships can be manned. And the process will be more satisfactorily conducted if we prepare for an emergency by careful organisation in friendly concert with the leading shipowners of the country.

The same policy may be followed in regard to officers. Many pupils from the 'Conway' and the 'Worcester' would be well qualified, with a short service in the Navy, for commissions in the Naval Reserve. It is impossible to employ afloat all the officers on the active

Officers of
Reserve.

list. The Admiralty should encourage some of those 109 unfortunate lieutenants, who are living ashore on a miserable half-pay, to follow up their profession by taking employment in the mercantile marine. The command of one of our great ocean-going steamers or clippers is a position which cannot be unworthy of a naval officer, and there are very few of those lieutenants on half-pay who could not add considerably to their professional knowledge if they were to command a fine clipper ship on a voyage round the world. The introduction of our unemployed naval officers into the merchant service would be a mutual benefit to both branches of the national marine.

Naval
College at
Greenwich.

I must not allow these remarks on the officers of the Navy to close without a reference to the naval university at Greenwich. It is an institution which, in an early speech in the House of Commons, I strongly recommended to the favourable consideration of Mr. Goschen; but the regulations, as at present laid down, require careful revision. All lieutenants should be required to study at the college for a period of nine months. The voluntary students at the present time are compelled, out of six hours of study per day, to devote three, and sometimes four, to mathematics. Two hours a week at the utmost are devoted to foreign languages. Mathematics, though always most valuable, are not an indispensable branch of knowledge for a naval officer, while, on the other hand, ignorance of modern languages is a too common deficiency in the profession. Mathematics are not required to lay a gun or to navigate a ship, and it is a mistake to force men over thirty years of age to an ungrateful study. Lastly, it should be pointed out that the inducements to voluntary study at Greenwich are insufficient. Officers who devote themselves seriously to work, and can pass suitable test examinations, should be allowed full-pay for a limited period of study.

LETTERS, PAPERS, AND ADDRESSES.

SECTION VI.

OUR NAVAL STRENGTH AND POLICY.

Reprinted from the 'Contemporary Review,' April 1876.

list. The Admiralty should
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state of the United States Navy is not, as with us, reviewed annually in a long speech by the Secretary at the head of the department. The subject is more satisfactorily treated in a report addressed to the President, to which are appended separate reports from the head of each branch of the naval service, together with a general report, to which we propose more particularly to refer, from the Admiral occupying for the time being the position of chief naval adviser to the department. That important post has been held for many years by Admiral Porter, an officer of the highest distinction in the American Navy. In his successive annual statements, Admiral Porter has more than once referred to the condition of the British Navy, and always in high terms of praise :—

Admiral
Porter,
U.S.N.

‘ Who,’ he says, in his reports for 1874, ‘ can interfere with British commerce, or maltreat a British subject in any part of the world without paying damages? The combined navies of Europe could not approach the English coast with safety.’

In another passage he says :—

The West Indian drill has made it apparent to our officers that our combined force of vessels was incapable of a successful encounter with a fleet a quarter as large, built on modern principles. Indeed, one such ship as the British ‘ Inflexible ’ ought to go through a fleet like ours, and put the vessels *hors-de-combat* in a short time. We have no ordnance that would make any impression on such a ship at a distance of 600 yards ; and no vessel of equal speed in our Navy could be placed under her fire by a prudent commander.

The reliability of this highly reassuring testimony from Admiral Porter will be confirmed upon a comparison of the numerical strength of the armoured fleets of the principal maritime Powers.

Statement
of M. Dis-
lère.

In our comparison a certain thickness of plating will be assumed as essential in order to justify us in including a ship in the category of armoured vessels. Monsieur Dislère has laid it down that armour of less than seven inches cannot be regarded as a protection against modern artillery. Without entering into discussion on the soundness of this opinion, we have accepted it, in the present instance, for the purpose of making a comparative estimate of the strength of the most powerful maritime nations of Europe in first class ironclads.

Excluding gun-vessels, France possesses a fleet of twenty-six iron-clad ships ; but, of these, twenty-two are built of wood, and five only are armoured with plating exceeding seven inches in thickness. There are in construction in the French naval yards the ‘ Redoutable,’ of 8,500 tons and 1,500 horse-power, two ships of the ‘ Colbert ’ type, the ‘ Friedland ’ and the ‘ Suffren,’ of 8,164 tons, three ships, the ‘ La

Calissonnière, the *'Triomphante,'* and the *'Victorieuse,'* having a displacement of 3,445 tons, of 500 horse-power, and armed with ten guns, and, lastly, the *'Tempête,'* of 4,452 tons, and 375 horse-power, and the *'Tonnerre,'* of 5,495 tons and 900 horse-power. The future strength of the French armoured Navy was defined in a programme laid down in the year 1872, when it was determined to build seven ironclads of the first class, five of the second, and eight coast-defence vessels. Of the first class five ships are built and three are building; of the second class there are three ships building; and of the coast-defence class two ships are building and four are built. It was proposed that the programme should be completed within ten years, but for this purpose an annual expenditure of 30,000,000 francs was required. The estimates, however, for the French Navy have been much reduced; and the appropriation for the construction of ironclad ships has thus far been limited to an annual sum of 20,000,000 francs.

German
Navy.

In 1873 a programme was laid down for the construction of the armoured fleet of the German Navy. The plan included the construction of eight first-class ironclads, to be protected by armour exceeding seven inches in thickness. All these ships are completed. Six corvettes were proposed. They were to be plated with 6-inch armour only. One vessel of this class, the *'Hansa,'* is now in commission, and two other corvettes of the same type are building. Seven monitors were included in the programme. Two of these have been built; and the construction of the remaining five vessels has been abandoned, the German Admiralty being now of opinion that the harbours on the coast can be more effectually defended by means of torpedoes and gunboats. Lastly, it was intended to build two armoured batteries; but these have likewise been abandoned.

Russian
Navy.

The Russian Navy possesses twenty-nine armoured vessels. In this number, however, are included monitors intended solely for coast defence, of from 1,600 to 1,400 tons, and plated with $4\frac{1}{2}$ -inch armour. Only two sea-going vessels, protected by armour exceeding seven inches in thickness, have been completed. The *'Peter the Great,'* which has been so much discussed and dreaded, though launched in 1872, still remains unfinished.

It will be seen from the above statement that, if we make a comparison of the British armoured Navy with the fleets of France, Germany, and Russia, we possess in our fifteen ships, all built of iron, none plated with armour of less than seven inches in thickness, and some defended by a cuirass composed of armour of from sixteen to twenty-four inches, as in the case of the *'Inflexible,'* and from four-

teen to sixteen inches, as in the case of the 'Dreadnought,' 'Thunderer,' and 'Devastation,' a fleet at least equal, if not superior, to those of the three Powers united.

Passing from a review of our present situation to a consideration of our future shipbuilding policy, it will be the duty of our statesmen to take care that, while adequate provision is made for the security of the country, we do not exceed the scale of expenditure which is strictly necessary. The vast armies maintained in continental Europe are a dishonour to the age in the which we live. Let us not, without grave necessity, arouse the susceptibilities of other nations by reckless additions to our naval estimates which will probably lead to corresponding expenditure elsewhere. We lay heavy burdens on the taxpayers of this country: we check the accumulation of those resources which can alone supply the means of enduring the strain of a protracted naval war; and, after all, the relative strength remains unchanged. It is equally clear that the composition of the fleets we may have to encounter, and the nature of the naval operations which would probably be directed against us, must be taken into consideration in determining what type we ought to adopt in the future for our fighting vessels.

Future
shipbuilding
policy

Bloated
armaments

France and the United States are our most serious naval rivals. In actual preparation, both of *personnel* and *matériel*, and in the scale of their annual expenditure, the French are far ahead of any other maritime Power. On the other hand, by their capability for building and manning a fleet, by their inexhaustible capacity for bearing taxation, by their unrivalled ingenuity, by the number and skill of their seafaring population, and by the absolute security of their principal harbours from attack by sea, the United States, although at present the least prepared of all the Powers of the first rank, would, in any long protracted naval war, unquestionably become the most formidable adversary with whom we could have to contend. There is happily little probability that the problem will be solved by actual experience in war; and the question is only raised in these pages as a subject for abstract discussion. Thus regarded, however, it is very interesting, and indeed essential, to know what is in the contemplation of the two most important maritime Powers. Their views have been clearly indicated in recent publications by very eminent authorities. For the United States we shall refer to Admiral Porter; and the current opinion of the French Navy has been recently and very fully stated both by Monsieur Dislère and by Baron Grivel, a distinguished naval officer, in his essay entitled *De la Guerre Maritime*.

Shipbuilding
policy
of France
and the
United
States.

In both countries it is admitted that pitched battles on the ocean could not be fought with success against a nation possessing the unassailable superiority which we have acquired in sea-going armoured ships.

Admiral
Porter,
U.S.N.

In his annual report for 1875, Admiral Porter says:—

It is only by destroying the commerce of a great nation that we could bring her to terms. Hence iron vessels, like the 'Alabama,' roaming over the ocean, sinking and destroying, would do more to bring about peace than a dozen unwieldy ironclads cruising in search of an enemy of like character.

For this reason he recommends for the American Navy a fleet of swift wooden cruisers, of at least 1,200 tons, with the heaviest batteries, and a speed of not less than fourteen knots.

Baron
Grivel

The same policy has been advocated by M. Dislère and by Baron Grivel. The views of these able writers are identical, and they both refer to the naval history of their country for evidence and illustration. Baron Grivel truly says that the problem every nation has to solve may be stated thus:—'Given, a naval expenditure of so many millions a year, in what proportion shall our naval preparation be applied.

' 1st. To coast defence.

' 2nd. To the protection of commerce.

' 3rd. To ships intended to engage in great combats, in line of battle?'

With a view to the elucidation of this subject, the naval history of France is reviewed in an able summary. It is pointed out that no naval battle has ever produced the same decisive results which have so often followed from victories gained on land, or has brought about in the same way the immediate conclusion of a treaty of peace. The fruitless efforts and cruel sacrifices of the naval forces of France are properly insisted upon, as an additional objection to the policy of engaging in those contests between fleets of line-of-battle ships, which in former times were so persistently renewed, and which were as advantageous to England as they were 'detestable, in their results, to her enemies.' It is recommended that, whenever France may be engaged in war with a great maritime nation, she should look to the exhaustion of her opponent, through the injuries inflicted on trade and industry, as the most effectual, and indeed the only, means of bringing her to terms. It is pointed out that England is five times stronger in shipping than France; a superiority naturally arising from the circumstance

that the one is an insular and the other a continental Power. With such immensely superior resources, it is easy, it is contended, to foresee the inevitable result of a series of naval battles. 'The Minister who, with wise discernment, shall have selected the fitting time and opportunity for employing the naval forces of France, and shall have been able to reach the weak point of the enemy, with comparatively limited naval means, will, in the opinion of Baron Grivel, 'have rendered a greater service to France than Colbert and Richelieu.' It is, indeed, demonstrated in the page of history that the glory won by the great naval armaments of France is small, by comparison with the brilliant achievements of the expeditions conducted on a less ambitious scale. Between February 1, 1793, and December 31, 1795, the French took 2,095 merchantmen, while, within the same period, their own losses did not exceed 319 vessels.

If the genius of Napoleon, who once wrote to Bernadotte, 'I have a hundred ships of the line, and yet I have not a Navy,' had employed the same sum of money in the construction of swift and well-armed vessels of much smaller dimensions, a guerilla warfare might have been carried on upon every sea, which would have brought him ample compensation. A comparison of the vulnerable surface presented by the maritime commerce of Great Britain and France respectively will suffice to show where the one has most to lose, and the other most to gain.

Another able French writer, Admiral Jurien de la Gravière, in his able essay, '*La Marine d'Aujourd'hui*', while viewing with evident reluctance the necessity for abandoning the attempt to maintain the supremacy of the sea, admits, nevertheless, that the destruction of the enemy's commerce may be the last resource of the weaker side; and such a policy, he acknowledges, it would be necessary to pursue, should France ever be called upon to engage in a naval contest with England.

Admiral
Jurien de
la Gravière

The reasonableness of the views thus developed by the most thoughtful men in the French Navy must convince our own naval administrators that, in the event of war, our commerce would be assailed by as many 'Alabamas' as our enemies could equip and send forth against us. Our most obvious means of defence would consist in arming with guns and torpedoes every available steamer in our merchant service. Our unrivalled superiority in ocean-going steamers adapted for conversion into cruisers, would go far to compensate for our greater vulnerability. It would not, however, be safe to rely solely on the merchant steamers for the protection of commerce.

Mercantile
auxiliary

As an additional security, I should be glad to see added to our Navy numerous vessels with sufficient armour-protection to give them

'Shannon
class.

a great advantage in an encounter with unarmoured vessels, although not adapted to contend on equal terms with enormous ships of the 'Inflexible' type. For the protection of commerce, an equal sum would be spent to greater advantage in building ships of the 'Shannon' class, two or three of which can be built for the amount expended on one 'Inflexible.' For an encounter with an 'Alabama,' the 'Shannon' is a superfluously powerful antagonist. If, however, we could send forth a sufficient number of 'Shannons' to cruise at sea for the protection of commerce, the dread of an encounter with an armoured vessel, from which there would be no possibility of escape, might have the effect of deterring the enemy's 'Alabamas' from venturing to sea.

Policy of
Naval
Powers.

It has been shown that we have no reason to expect that other maritime Powers will expend a large proportion of their comparatively limited resources on costly ironclads of the 'Inflexible' type. In point of fact, we know that neither the Americans, the Russians, nor the Germans, contemplate at present any addition to their fleets of armoured ocean-going ships of high freeboard. The Americans are building no new ironclads of any description. The efforts of the Russians are concentrated in the construction of one or two 'Popoffkas'; and the Germans, content with eight splendid ships, have decided to build no more first-class ironclads at present. The French have a few fine ships in construction; but the work is being carried on with a deliberation which shows that serious doubts are entertained as to the expediency of building any ships of so large a type.

Ironclads
indispens-
able.

Under these circumstances, what course should be adopted by the British Admiralty? With our immense maritime interests, we cannot afford to sit still like other Powers, who do not depend for their existence on their commerce. Laying it down, therefore, as an absolute rule, that our present scale of expenditure shall not be exceeded, unless and until the naval expenditure of other Powers shall unhappily have been considerably augmented, the question we have to consider is how best to apply the ample resources placed at the disposal of the Admiralty by a confiding and generous Parliament. This is essentially a naval question; but even unprofessional minds must be convinced, upon an impartial review of the publicly expressed opinions of the most competent authorities, that the gun, the ram, and the torpedo, are indispensable elements of the English naval force; and that the advantage of armour, in an engagement between an armoured and an unarmoured vessel, is such that we cannot venture as yet to abandon the construction of ironclad ships.

The most recent changes in naval warfare have tended to augment

the relative power of offensive weapons, as compared with the means of defence. Although, therefore, we cannot venture as yet to abandon armour altogether, it seems more important to strengthen the fleet in weapons, which are certain to be formidable for attack, rather than to accumulate armour, which, as a means of defence, is of more doubtful value. The fleet, which has a decided superiority in numbers and in the power of its guns, its rams and torpedoes, cannot fail to inflict many irresistible blows, while possessing in the wide distribution of its force perhaps the best security that can be obtained against similar weapons in the hands of an enemy.

Develop-
ment of
offensive
power.

Pending the discovery of a really reliable automatic torpedo, the English Navy should be furnished with an ample store of that simpler form of torpedo, which is exploded on contact, and is carried at the extremity of an outrigger some forty feet in length. Torpedoes of this description have been long in use in the American service, and, in the hands of men of unflinching courage, would do terrible destruction. Admiral Porter has graphically described how, 'when the battle commences, and the ships are enveloped in smoke, rams and torpedoes will have pretty much their own way; and the more smoke there is, the better it will be for them.' The ships of the 'Minotaur' class have been criticised for their insufficient armour and their excessive length: but they would become most formidable if they were supplied with torpedo-boats, which they could carry in larger numbers than it would be possible to stow in a shorter vessel.

Torpedoes.

A general and decided concurrence of opinion has been established in favour of steam rams; and as the ram becomes increasingly formidable in proportion to its mobility or handiness, and the smaller the tonnage the more easily, *cæteris paribus*, a vessel can be manœuvred, it is clearly desirable to limit as closely as possible the tonnage of all ships intended to be used as rams. Both Baron Grivel and M. Dislère have recommended that rams for purely harbour defence should be built without guns.

Rams.

In rams intended for a wider field of operations, artillery would appear to be indispensable. In his observations on the best type of ram Baron Grivel truly says that when we take into view the difficulty of ramming an enemy in the side at right angles, it is evident that there would be ample opportunity in a naval engagement for the effective employment of artillery. The addition of guns involves considerable increase of tonnage, though it is to be hoped it will not involve the unwieldy dimensions we have unfortunately reached in our most recent ships.

For bombardments, and for operations against the coasts ar

harbours of an enemy, guns are, of course, indispensable. It was on this ground that Mr. Reed especially insisted, in a recent speech in the House of Commons, that the construction of ironclads should be prosecuted with undiminished activity. As, however, a moderate draught is essential for operations on a coast, ships of the 'Inflexible' type are not available for such a service. No officers have had so much experience in naval operations against batteries as the Americans who served in the Civil War; and Admiral Porter has stated in his report for 1875, that after examining over a hundred plans of foreign ironclads, he thought he was justified in the conclusion that a vessel like the 'Miantonomoh' was better adapted for protecting coasts and harbours, and for engaging land batteries, than any ship yet built. General Von Stosch has decided on abandoning the construction of monitors for the defence of the German harbours, believing that gunboats and torpedoes will be sufficient for that purpose. Torpedoes, however, are not available for offensive operations against land batteries; and should we find ourselves engaged in the shallow waters of the Baltic, or the north coasts of Europe, a flotilla of monitors would probably be of great value. The Russians possess fourteen monitors, while we have only four vessels of the 'Gorgon' type. An addition to the number should therefore be proposed in the programme for next year.

It may be urged that, the smaller the dimensions, the more quickly a vessel can be built, and that it is less important therefore to proceed with the monitors than with ships of a larger class. But even monitors could not be laid down and completed within the short space of time in which modern conflicts have been decided. In any case, if monitors can be built quickly, gunboats can be built far more quickly, and on this ground it would be impolitic to spend more on small unarmoured vessels than is necessary to supply the immediate wants of the Navy.

Battle-ships.

We have now to consider, lastly, the most difficult problem of modern naval construction—viz., the best type to adopt for line of battle. The progress of events has shown that offensive weapons have gained a complete ascendancy over the means of defence. Armour no longer affords an impenetrable target to projectiles; and it gives no protection whatever against the ram and the torpedo. Armour, of sufficient thickness to be a shield against the fire of the guns now extensively mounted on board ship, must be so weighty that it is impossible to protect the high sides of ocean-going vessels; and we must be content if we can give protection to the water-line, and to the engines and boilers.

In the great uncertainty which envelopes the future of naval con-

struction, the Admiralty are clearly right in completing the armoured vessels already commenced, before undertaking new designs. In a paper published by the Prince de Joinville in the *Revue des Deux Mondes*, in 1867, and republished with additions in 1871, he endeavours to show, from the experience derived from the American Civil War, that in all international struggles the relative strength of the naval forces of the contending Powers must exercise an important influence on the issue of the conflict. He thinks that the fleet must be strong enough, not merely to commit depredations on commerce, but to maintain the command of the seas. The naval policy recommended for France by the Prince de Joinville is inspired by ambitious aims; and yet even he does not advise that the construction of armoured ships should be prosecuted too rapidly, or that many vessels should be laid down simultaneously.

Prince de Joinville. Objections to rapid creation of armoured fleet.

‘Such rapid progress is being made in these days in inventions, and in their application and perfection, that what seemed the last word of science yesterday is out of date to-day. If, therefore, too many ships of a uniform type are laid down at the same time, a risk is incurred of building at a great cost vessels which may be condemned as useless, before they can be completed for service.’

Whatever may be the type adopted, we trust that, for the future, our naval constructors may be directed by Parliament to confine themselves within the limits of tonnage laid down by Admirals Elliot and Ryder, who, in their separate reports, as members of the Admiralty Committee on recent designs for ships of war, expressed their conviction that distribution rather than concentration of force should be the aim of the naval architect, and that a tonnage of 9,000 tons should never be exceeded.

We may now proceed to recapitulate our various suggestions for the future shipbuilding policy of the Navy. The construction of first-class armoured ships should not be discontinued. Whatever may be the final issue of the contest between armour and projectiles, armour is still essential to enable a ship of war to engage in line of battle. But, while the construction of ships of the most formidable type is still carried on, we venture to hope that a portion of the expenditure will in the future be appropriated to the construction of a considerable number of small armoured vessels for special services, and we would particularly invite the attention of the Admiralty to the strong recommendations, by officers of foreign navies, in favour of rams without guns for general service, and specially for the defence of harbours, and to the high estimate formed by the American officers of the monitor type for the purpose of attacking land batteries.

General conclusions.

It affords us much satisfaction to acknowledge, in conclusion, that, when we pass in review, calmly and dispassionately, the most recent phases of the shipbuilding policy of the British nation, it must be pronounced on the whole to have been eminently successful. The gradual development of our power, in a succession of original designs, embracing every kind of innovation upon the types in vogue fifteen years ago, reflects the highest credit on the naval and professional officers, by whom the shipbuilding programme of the Admiralty has been advised and executed.

LETTERS, PAPERS, AND ADDRESSES.

SECTION VII.

*ON THE MAINTENANCE AND REPAIRS
OF THE NAVY.*

ON THE MAINTENANCE AND REPAIRS OF THE NAVY.

BEFORE entering upon other matters it may not be superfluous to remark that all sudden changes of policy in naval administration ought to be avoided. Large dismissals of workmen shake the confidence of those employed in the dockyards; a spasmodic increase of activity is always costly, and designs not sufficiently considered are often disappointing, and involve great expense in subsequent alteration. Differences of opinion have arisen between successive Boards of Admiralty as to the appropriation of the resources of the dockyards. Some have advocated the policy of keeping the fleet at all times in thorough repair, while others have urged that in a time of peace we should devote ourselves to building, as being a slower process than repairing.

Cost of
repairs in
French
dockyards.

As we are engaged in criticising, it ought in fairness to be stated that the English Admiralty have been more successful than the French in checking expenditure on repairs. The Financial Commission of the French Senate, in their report for 1877, direct special attention to the fact that for the construction and repair of a fleet of about half the tonnage, 6,000 more men are employed in the French dockyards than in the English. In our own dockyards 16,109 workmen are employed, at a total charge of 1,008,854*l.*, or 62*l.* 18*s.* per head; while 26,000 men are employed in the French dockyards, at a total charge of 920,000*l.* It is difficult to arrive at the exact cost of new ships built in the public yards; but we know that the cost of ships built by contract is about the same in both countries. The difference, if any, is in favour of the English shipbuilders. When we come to the cost of maintenance and repairs, as stated by M. Dislère in his exhaustive analysis of the naval expenditure of the two countries, we find a marked and striking contrast.

	England	France
Ships in commission	255,000 tons	170,000 tons
Cost of labour	3,580,000 francs	3,730,000 francs
Total cost of labour and material per ton	30 francs	91 francs

If we may venture to accept the data supplied by M. Dislère, it would appear that the repairs of the French fleet are three times as costly as the repairs of the English fleet.

In the debates in the Chamber of Deputies on the Naval Estimates for 1880, M. Eugène Farcy exposed the mistakes of the French naval administration unsparingly. He quoted the case of the armoured ram 'Taureau,' the turret of which, after completion, was condemned as defective, another turret being constructed to replace it. When the new turret was completed, it was discovered that no means of access had been provided, and the armour, of 12 c/m. in thickness, was cut with the cold chisel in order to make the necessary aperture. The 'Taureau' made an unsuccessful trial, and numerous alterations were required, the result being that the final cost of the ship was no less than eight million francs, as compared with the original estimate of five millions. Similar mistakes were made in the case of the 'Tonnerre,' a vessel of the same class.

M. Farcy referred to the case of the 'Victorieuse,' which was fitted out to carry the Admiral's flag in the Pacific. When supposed to be ready for sea, it was found that extensive repairs were required. The vessel had descended the Charente from Rochefort, and having received her armament and stores, it was ascertained that she was not fit to go to sea. She could not ascend the river again, as she had her armament on board, and was therefore sent to Brest to be docked. At Brest it was ascertained beyond doubt that the ship was not seaworthy, and the 'Magicienne' was accordingly fitted out to take her place. The sum wasted in this case was not less than 620,000 francs.

M. Farcy referred to the case of the transport 'Aveyron.' This vessel was fitted out on May 5, 1878, and when required for service on December 5 following, it was found that she was not fit to be employed. It was accordingly necessary to fit out another transport, the 'Corrèze,' for the same service. A short time afterwards the same thing occurred in the case of the 'Dryade,' another transport, which was found unfit for service, and for which the 'Européenne' and afterwards another ship were selected as substitutes.

It is the fashion to find fault with the naval administration of this country. The administration of a service of such complexity cannot be free from error, but the work, in the main, is done in a manner which ought to give satisfaction to the country. Those who criticise the British Admiralty so severely should sometimes look abroad, to see how they manage these things in foreign countries. In Russia the 'Peter the Great' cost fifty per cent. more than

that valuable vessel the 'Devastation': and the 'Vice-Admiral Popoff,' which cost 420,000*l.*, represents to the Russian taxpayer little more than the value of old iron.

Upon the question of the cost of work in our own and in foreign dockyards, the figures given by M. Dislère offer some interesting particulars. The French 'Duquesne,' he points out, might be compared with H.M.S. 'Inconstant.' The type was the same in each case, and the displacements were 5,436 and 5,560 tons respectively. The cost of the French ship was 300,000*l.*; that of the English ship was 228,000*l.* In the second class, the 'Duguay-Trouin,' of 3,177 tons, corresponds with the 'Volage,' of 3,143 tons, in our own Navy. The French ship cost 164,000*l.*, while the cost of the English ship was 134,000*l.* A comparison of the cost of the engines, taken as a separate item, results not less favourably to our own country. The amount expended on the engines of the 'Duguay-Trouin,' with 6,589 indicated horse-power, is 96,000*l.*, while the cost of the engines of the 'Inconstant,' with 7,460 indicated horse-power, is 76,000*l.* Again, the engines of the 'Bourayne,' of 960 indicated horse-power cost 12,400*l.*; those of the 'Encounter,' of 2,156 indicated horse-power, cost 19,600*l.*

Considering the relative numbers of the ships maintained in commission in the two navies, and the new tonnage produced in the dockyards, it is a remarkable circumstance that, while the number of workmen in the English establishments is fixed at 16,000, the number in the French dockyards in recent years has been from 22,000 to 28,000. The wages of all classes of workmen in the French service have been recently advanced five per cent., and a promise has been made by the Minister of Marine of an advance of fifteen per cent. within two years. The Government undertake to bring the wages in the dockyards to the level of those in the private trade.

In the German Navy, where the integrity and economy of the administration have never been questioned, we find, from statistics published in the *Revue Maritime*, that the cost of maintenance has attained proportions even more serious than those which have attracted so much attention in this country.

As a whole the administration of the British dockyards will challenge comparison with any other. Its defects are inherent in every Government establishment. Its merits have been loudly extolled by the successive committees on the French Naval Estimates; by Chief Engineer King, of the United States Navy; by M. Dislère, and many equally competent critics.

Favourable
opinions of
British
dockyard
administra-
tion.

Mr. King, in his *European Ships of War*, pays a high tribute of praise to our dockyard administration: 'The system of dockyard administration is the best in existence. . . . (One familiar as I am with dockyard duties and with workshops generally, at home and abroad, cannot but feel impressed on observing the prompt and businesslike way in which the duties are carried on in these great British naval establishments. No idle officers or loitering persons are to be seen in any place within one of these yards at any time during working hours.

'The contrast between these admirably conducted establishments and those of France and other continental countries, Germany excepted, is noticeable soon after entering the gates. There, and especially in France, numerous idle officers in uniform, and loitering workmen, may be seen in every department entered.'

Mr. King, in another report on the dockyards and iron works of France and England, speaks in the highest terms of the admirable workmanship of the 'Achilles.' During the ten months that she had been afloat not a wine-glass of water had leaked into her, a circumstance unprecedented in the history of shipbuilding.

Gratifying as it is to receive such assurances from foreign observers, the conviction that we do not suffer by comparison should not diminish our anxiety to improve and perfect our organisation.

Comparative naval expenditure in England, France, and Germany.

Let us therefore examine the reasons why the relative expenditure on building is so much less in England than in France and Germany. It has been the settled policy of this country for many years past to spend a much larger sum on the *personnel* in proportion to the *matériel* than is expended in other countries excepting France. The large number of officers and men maintained in our Navy entail, not only a direct expenditure in pay and building and repairing sea-going ships, but also in retired pay and pensions. The non-effective votes may be estimated at two millions. The entire expenditure, ordinary and extraordinary, on the German Navy is only 2,250,000*l*.

Non-effective votes.

The growth of the non-effective expenditure may be appreciated by a comparison with the estimates of twenty years ago. In 1860-61 the total amount of the estimates was 12,836,000*l*., or in round figures 2,340,000*l*. more than the estimates for 1880-81. At the earlier date the total amount of the non-effective vote was 1,353,098*l*., or 591,000*l*. less than the amount which Parliament is called upon to vote for the ensuing financial year.

Having referred to the non-effective vote, the large expenditure on the maintenance of our foreign squadrons may be specially men-

Comparative expenditure of

the naval Powers on maintenance of ships in commission.

tioned as involving a serious deduction from the sum available for the construction of fighting ships. Our armoured shipbuilding advances but slowly, because we have accepted the self-imposed duty of maintaining the police of the seas, while other countries, evading their share of this burdensome obligation, are able to concentrate their resources on fighting ships. It was calculated by Sir Spencer Robinson that for every man voted for the Navy 10*l.* were required in wages to artificers.

It is interesting here to notice that for a period of a hundred and fifty years prior to the great naval war, an expenditure of 4*l.* per man per month was found sufficient to cover the ordinary services for the maintenance of the fleet in commission. In 1798 the sum voted was increased to 7*l.* per man, distributed as follows :—

	£	s.	d.
Wages	1	17	0
Wear and tear of ship	3	0	0
Victualling	1	18	0
Ordnance	0	5	0

Remarks of the Secretary of the United States Navy, 1869.

The report of the Secretary of the United States Navy in 1869 called attention to the marked difference in the expenditure on ships in commission in the principal mercantile countries. At that date the ships of war in commission under the United States flag represented a total tonnage of 55,455 tons, or one-eightieth of their total mercantile tonnage. At the corresponding date the tonnage of the French ships of war in commission was 250,000, or one-eighth of their maritime tonnage. The English ships in commission represented a total of 328,614 tons, or one-seventeenth of the total maritime tonnage.

Ironclads in commission in British Navy.

Ironclads in commission in French Navy.

In the year 1880 the British force of ironclads in commission included four ships in the Channel fleet, six in the Mediterranean, one on the North American station, two on the Pacific station, two on the China station, and nine reserve ships. At the present time the French foreign-going ironclads are only two in number, one of these being employed as a flagship in the Pacific and the other on the China station. Nine ships are kept together in European waters as a squadron of evolutions, and one ironclad is under trial. The German squadron of evolutions consists of four ships, and these are kept in commission only during the summer months. Our expenditure on the repairs of ironclads is much heavier than that of any other maritime Power, and this arises from the large number in commission in time of peace. Taking an average of years, it may be assumed that the cost of repairs will be about 10,000*l.* per annum for each ironclad in commission. A good administration should seek to keep

ships in perfect fighting order. It cannot be a wise policy to fit out every new ship for a three or four years' commission. Should a war break out, the vessel may require new boilers, and be unavailable for active service when urgently wanted.

M. Bethmont, the author of the able report of the Committee of the French Chamber on the naval estimates for 1878, has shown that in Germany 66 per cent. of the money voted for the Navy is devoted to the construction of new ships. The corresponding percentage in Russia is 62 per cent.; in England, 36; in France, 35 per cent.

According to M. Dislère, our expenditure in maintaining ships in commission amounts to 2,200,000*l.* The French expenditure is 900,000*l.* The proportion, therefore, is as 2·1 to 1. With this outlay we keep up 130 ships of 255,000 tons displacement, manned by 31,600 men, while the French have 89 ships of 179,000 tons, manned by 17,350 men, the displacement of the ships being as 1·5 to 1, and the strength of the crews as 1·8 to 1. Every man afloat costs in France 53*l.* 4*s.*; in our own service, 66*l.* a year. The total expenditure on ships in commission, including repairs, stores, and coal, on ships in reserve and old ships in reserve may be estimated at 1,410,923*l.*

The very different measure in which the cost of the police of the seas is apportioned, as between this country and France and Germany, will be most effectively illustrated by giving a short analysis of the composition of their respective fleets on several foreign stations.

If we compare our squadrons in the South Atlantic and on the east coast of America with the corresponding forces maintained under the French flag, we find that the French have in the South Atlantic at Guyenne, Senegal, and in the West Indies two first-class cruisers, three corvettes, and two sloops, with other smaller vessels, forming a total of 12,360 tons. Our own forces comprise a total of 33 ships, with an equivalent tonnage of 47,040 tons. In the Pacific we have two ironclads of an aggregate tonnage of 12,099 tons, and 9,112 tons of unarmoured vessels, distributed in seven ships; the French have one ironclad of 4,214 tons, and five unarmoured vessels, with a total tonnage of 4,896 tons; the Germans have one ironclad of 3,610 tons, and three unarmoured vessels of 5,331 tons.

When I was in the Pacific all our ships except the 'Shah' were sensibly inferior in speed, and three were very inferior in tonnage, to the French ships. It is a question whether a reduced number of larger vessels better adapted to make long voyages under sail on the wide waters of the Pacific might not be at once more serviceable, and less expensive. In the discussion on the Naval Essays of 1878

M. Bethmont.

M. Dislère.

Analysis of
fleets on
foreign
stations.

South
Atlantic.

Pacific.

at the United Service Institution, Captain Long, who had just returned from the Pacific, said: 'Telegraphic communication forms a new element in the question of the distribution of our naval forces. It is more valuable to have a powerful vessel that can go rapidly from your telegraphic centre, performing the service you require, and come back rapidly ready to perform another service, than to have a number of smaller vessels which are less capable of performing rapid passages, and may not perhaps be ready for months.' A change in the direction indicated by Captain Long has lately been made, the 'Comus' and 'Albatross' having been commissioned as reliefs for five smaller vessels.

China.

On the China station we have two ironclads, of a total tonnage of 8,785 tons, and nineteen unarmoured vessels, of a total tonnage of 21,293 tons and 141 guns. On the same station the French have nine vessels, of 10,670 tons and 38 guns, and the Germans four vessels, of an aggregate tonnage of 6,519 tons and 28 guns. The flag of the United States is represented by the 'Swatara,' 'Richmond,' 'Ashuelot,' 'Monocacy,' 'Alert,' and 'Palos'; total 43 guns.

The Russian squadron includes the following vessels: 'Minin,' armoured corvette, 5,740 tons, 16 guns; 'Najezdnik,' 'Djigit,' and 'Razboynik,' corvettes, each of 1,334 tons, and three guns; 'Asia,' converted merchant steamer; gun-vessels: 'Abrek,' 1,069 tons and seven guns; 'Tunguz,' 706 tons, four guns; and the 'Gomostai,' 'Nerpe,' 'Morge,' 'Sokol,' 'Mandjour,' and 'Ernak,' gunboats.¹

Setting aside special emergencies, and looking only to the ordinary duties of the police of the seas, it is a matter for very grave consideration how far it is necessary to maintain so many small vessels in commission in China. The suggestion that our ships should be fewer in number, but of a more powerful class, would seem to apply to the China squadron not less than to our fleet on the Pacific station. Commander Hayes, in his prize essay, recommends vessels of the 'Comus' class, as cruisers capable of steaming against the monsoon. It requires careful management to bring our flagship, the 'Audacious,' against the monsoon from Singapore to Hong Kong. It is necessary to coal at Labuan, to hug the shore, and to adopt, in short, every expedient for husbanding the inadequate supply of coal. These measures involve delay in making the passage, which might be of most serious consequence in the emergency of war.

¹ This statement refers to the number of ships in 1878. During 1880 it has been considerably increased.

station we have twelve vessels, of 16,141
vessels, of 4,463 tons. On the Australian
In the surveying service we have
ships, and ordered home nine

**East
Indies.**

ration to keep down
 vessels which add
 never, to be
 ace partly
 ships must
 ers, on whom
 ing service, the
 t for its purpose,
 on, however, of the
 he substitution of a
 affording fewer oppor-
 subjects which deserve
 d be saved by training our
 a squadron of sailing vessels

Squadrons maintained partly for training the Navy.

on connected with the Admiralty appointment, when he has come to the end of the money voted is absorbed in the construction of the fleet. It is because the dockyard is largely appropriated to repairs that the construction of new ships has hitherto borne a small proportion to the total outlay. It might have been desired to the total outlay. The construction in the dockyards and by contract, since Shaw-Lefevre's return, was :—

Naval resources absorbed by expenditure on repairs.

**Mr. Shaw-
Lefevre's
return ;
tons built.**

							Tons
1975	.	.	.	.	.	.	8,457
1976	.	.	.	.	.	.	14,276
1976-77	.	.	.	.	.	.	11,448
1977-78	.	.	.	.	.	.	7,113
1978-79	.	.	.	.	.	.	8,430

estimates for 1880-81 provide a total amount of 860,000/ for the construction of 7,231 tons weight of armoured shipping, which may be roughly set down as equivalent to 11,500 tons of displacement, a tonnage which would represent the addition to the Navy list of one 'Inflexible.'

The programme proposed by Mr. Childers as representing the normal requirements of the British Navy included 12,000 tons of armoured, and 7,500 tons of unarmoured ships. Of this tonnage 4,000 tons were to be built by contract. This was estimated to give three new ironclads, one frigate, one corvette, and six small vessels annually. Taking the life of an ironclad at twenty years, this would produce and keep up a force of fifty to sixty ironclads.

In 1878 M. Dislère gave the following comparative view of the navies and naval constructions of the two countries:—

French estimates and ship-building programme.

	England		France	
		Tons		Tons
Ships afloat—Modern fleet . . .	241	513,000	176	382,000
" Wooden fleet . . .	27	107,000	61	150,000
In construction	53	65,600	61	39,600

For every 1,000 tons of the modern fleet afloat England was constructing 102, France 104 tons. The whole sum voted for naval construction and repairs in the French estimates of 1879 was 2,450,000*l.* Half of this amount is appropriated to the building of new ships. In France, by a decree of the National Assembly in 1875, an annual credit of 1,200,000*l.* was set apart for the construction of 48 new ships, including 16 first-class ironclads, 12 second-class ironclads, and 20 coast-defence armoured vessels, all to be completed in 1885.

Germany.

Germany devotes 1,200,000*l.* to the ordinary expenditure of the Navy, and 1,700,000*l.* to the extraordinary expenditure. Of the extraordinary expenditure about 800,000*l.* are devoted to ship-building, 30,000*l.* to torpedoes and torpedo-boats, and 40,000*l.* to the armament of the fleet. The German programme includes sixteen armour-plated ships of the first class, to be completed in 1882.

The English estimates provide for an average annual expenditure of one million sterling on the construction of armoured, and three-quarters of a million on unarmoured ships.

Important to reduce cost of maintenance and increase ship-building for British Navy.

While admitting that there is no cause for misgiving as to our present position as a naval Power, the expenditure in her Majesty's dockyards demands serious consideration with a view to discover a means of curtailing the cost of maintenance and repair. We may have a force of more than respectable power in comparison with foreign navies, but in view of the efforts of rival nations it becomes our urgent duty to curtail wasteful expenditure, and to apply the

money saved by judicious retrenchment to the construction of fighting ships.

The extent to which the resources of the dockyards are absorbed in the maintenance of our large force of ships in commission is clearly shown in the Appendix to the Estimates, giving the appropriation of men from year to year. A great effort was made by Mr. Childers to increase the proportion of men employed in building. In 1870-71, the number was 6,349, as against 4,793 employed in repairs. It was found by experience that these numbers could not be maintained, and in 1872-73, 5,639 men were appropriated to building, and 7,102 to the repairs of the fleet. In the estimates for 1880-81 we have 5,795 for building, and 9,769 for repairs.

Efforts of
Mr. Childers.

The rapid increase in the expenditure in repairs is clearly shown in the report on the shipbuilding accounts of 1877-78 by Mr. Hamilton, the Accountant-General. The aggregate expenditure, extending over a period of nine years, is given in the following table:—

Analysis of
shipbuilding
accounts,
1877-78.

	Ironclads	Unarmoured	Total
	£	£	£
1869-70	130,743	446,549	577,292
1870-71	182,065	478,551	660,616
1871-72	87,595	397,342	484,937
1872-73	158,923	389,983	545,916
1873-74	291,381	524,601	815,982
1874-75	320,229	672,570	992,792
1875-76	321,871	631,806	953,677
1876-77	207,446	600,210	807,656
1877-78	489,182	580,243	1,069,435
1878-79	430,677	650,219	1,080,296

The next table gives the sums spent on shipbuilding, as distinguished from repairs:—

	Ironclads	Unarmoured	Total
	£	£	£
1869-70	1,076,384	310,899	1,387,047
1870-71	1,014,215	316,599	1,330,814
1871-72	695,038	480,134	1,184,172
1872-73	299,825	509,262	809,087
1873-74	385,960	904,069	1,290,028
1874-75	742,164	785,997	1,528,161
1875-76	1,058,463	554,755	1,613,218
1876-77	940,318	1,181,642	2,121,260
1877-78	1,948,472	973,970	2,922,442
1878-79	631,195	876,854	1,508,049

During the nine years, 1869-78, we expended 6,676,347*l.* on building, and 5,224,709*l.* on the repairs of our unarmoured vessels. In the same period the expenditure on the construction of armoured ships amounted to 8,792, 595*l.*, while the expenditure on repairs was 2,619,512*l.* Going back to the first introduction of ironclads into the Navy, we find that, while the total expenditure from 1859 to 1868-69 was 116,000,000*l.*, only 10,000,000*l.* were expended in building ironclad ships.

The previous observations will have afforded some explanation of the reasons why a comparatively small proportion of the money voted for the Navy is applied to the construction of fighting vessels. It has been the policy of this country to maintain a force of ships in commission far exceeding the corresponding numbers in the French and German Navies. Admitting, however, that the maintenance of such a force entails inevitably a large expense, there is reason to believe that our expenditure has not in all cases been judiciously applied.

The following statement gives the cost of construction, date of completion, and subsequent expenditure on repairs of certain armoured ships:—

Cost of repairs of armoured ships.

	Date of Completion	Total cost	Cost of Repairs to March 22, 1879
		£	£
Invincible	October 1, 1870	249,203	101,262
Agincourt	December, 1868	483,000	156,195
Swiftsure	June 27, 1872	267,718	42,336
Northumberland	October, 1868	490,680	170,202
Triumph	April 8, 1873	268,561	79,888
Warrior	October, 1861	377,292	200,185
Devastation	April 19, 1873	361,438	33,100
Glatton	April 24, 1872	223,101	28,648
Iron Duke	January 21, 1871	208,763	97,960
Monarch	August 5, 1869	371,415	169,077
Repulse	January 30, 1870	247,282	70,543
Sultan	October 10, 1871	374,777	89,302

Cost of repairs of certain unarmoured vessels.

The extent to which expenditure on repairs has been carried may be best understood by quoting a few examples, taken from the returns obtained by Mr. Goschen, Mr. Shaw-Lefevre, and Sir John Hay. Limiting our view to the unarmoured vessels, we find in the class of corvettes that the 'Wolverine,' of 2,431 tons, was repaired at a cost of 38,091*l.*, and the 'Druid,' of 1,871 tons, at a cost of 36,000*l.* The 'Thetis,' another wooden vessel of the same class, built at Devonport, in 1871, at a cost of 76,200*l.*, and the 'Encounter,' of 1,934 tons, built at Sheerness, in 1873, at a cost of 73,300*l.*, were each repaired at an expense of 30,000*l.*, after one

commission. Seven small wooden corvettes, of the 'Danae' class, of 1,755 tons, were repaired at an average cost for each of 30,294*l.* The return No. 312, for 1878, shows the cost of repairs to six wood-built sloops of from 1,000 to 1,400 tons, including the 'Amethyst,' 'Briton,' 'Dido,' 'Druid,' and the 'Encounter,' and 'Thetis,' which have already been mentioned. Although neither of these ships had done more than five years' service, the cost of repairs to the six was estimated at 166,000*l.*, and the actual cost was probably not far short of 200,000*l.*

The wooden vessels of the Royal Navy are built of the best materials, and are so fastened as to make them eligible for a sixteen years' class at Lloyd's; and yet the expenditure on repairs in the cases cited was equal to half their original cost, within a period of from twelve to fourteen years.

The cause of the rapid decay of corvettes of the 'Danae' class was discussed in the columns of the *Broad Arrow* of December 20, 1879. The writer asserts that the frame timbers had been fitted too closely, leaving half the number of air-spaces that are usual in the mercantile navy, and impeding ventilation, which is the best preventive of the growth of fungus in timber.

Passing on to the smaller class, the 'Fantôme' sloop, of 894 tons, was repaired at a cost of 17,780*l.*; while seven gun-vessels of the 'Bird' class, of 774 tons, were repaired at an average expense for each of 16,970*l.*, and ten composite gun-vessels, of 584 tons, at an average cost of 10,965*l.* The expenditure on repairs in these two classes was, as nearly as possible, half the original cost of the hull and machinery.

The same tendency to extravagance in repairs and alterations exists in every Navy, and the explanation is not far to seek. It was remarked by M. Lamy, an eminent authority on naval subjects, in the debates in the French Chamber in 1878, that it is the ambition of every officer to make his ship as perfect as possible. Vessels under construction have no natural protectors.

The last report of the Accountant-General on the dockyard expense accounts calls attention to the alterations of the ships purchased out of the vote of credit in March, 1878. Up to March 31, 1879, the cost of the 'Neptune' had been raised from 600,000*l.* to 632,822*l.* The cost of the 'Superb' had been raised from 453,475*l.* to 489,322*l.* The cost of the 'Belleisle' had been raised from 243,446*l.* to 267,186*l.*

The cost of alterations in other cases is given in the following account, showing first estimates and final cost of hull on completion of

'Danae' class.

'Bird' class and gun-vessels.

Report of Accountant-General on expense accounts, 1878-9.

Cost of alteration of ironclads.

armoured ships launched from H.M. dockyards during the last ten years :—

Name	First Estimate for Hull	Final Cost of Hull on Completion	Remarks
	£	£	
Alexandra	311,000	395,792	Laid down 1873
Devastation	238,000	290,860	" 1860
Dreadnought	269,000	493,035	" 1870 (but subsequently reconstructed)
Glatton	143,086	189,133	Laid down 1868
Iron Duke	200,886	146,314	" 1868
Rupert	169,000	192,139	" 1870
Shannon	168,000	233,902	" 1873
Sultan	320,000	281,576	" 1868
Téméraire	281,000	367,739	" 1873
Thunderer	236,000	306,346	" 1860
Agamemnon	350,000	¹ 385,000	" 1876
Ajax	350,000	¹ 385,000	" 1876
Inflexible	401,000	¹ 563,497	" 1874

In a lecture delivered at the Midland Institute, Birmingham, on March 27, 1871, Sir E. Reed suggested that preparations should be made for the construction of ships in time of war, by providing keelsons, stern-posts, frames, and the heavier parts of the machinery, postponing the completion of the ships until they were required for service. By the adoption of his plan, he contended that the most suitable types could be adopted, and the vessels built in conformity with the most recent developments of maritime warfare. The following extracts are taken from Sir E. Reed's paper :—

'Our Naval
Coast De-
fences.'
Address at
Birming-
ham,
March 27,
1871. Sir
E. J. Reed,
K.C.B.,
M.P.

'We have at our hands abundant material and labour for turning out an enormous number of small-size coast-defence vessels, in an extremely short time, provided—1, that all our plans for the production of these vessels are in perfect readiness; 2, that we construct beforehand the sterns, stern-posts, engine-shafts, and other parts, which necessarily take time to produce, and which no amount of labour and no expenditure of money can possibly produce quickly. By the wise expenditure of a sum equal to the price of a single vessel, upon those essential parts which take a considerable time to manufacture, we may possess ourselves of the means of quickly producing ten vessels whenever they are wanted. This plan has the recommendation of possessing great elasticity. A vessel may undergo great modifications of idea and of design, consistently with the employment of the same stern, stern-post, engine-shafts, &c., in each case; and it will be an immense advantage if, instead of crowding our harbours with vessels

¹ Estimated vessels in hand.

built on certain fixed and unalterable types, we adopt measures which will leave us free to improve our designs while holding in our hands the means of suddenly developing our powers.'

It is a regrettable result of the long delays in the completion of our ships that they are comparatively out of date when they are first commissioned. Ships can be and ought to be constructed with greater expedition. The report of the Commission of the French Chambers on the Naval Estimates for 1879 refers particularly to this subject. It is pointed out that in 1876, 90,000 tons were building in the English and 130,000 tons in the French dockyards; that twenty-three ships had been commenced in England and forty-seven in France; that eight armoured ships were in progress in England and eighteen in France; and that of the 130,000 tons on the stocks in France it had been proposed to complete 24,600, whereas of the 90,000 tons undertaken by England 32,500 were to be completed.

M. Lamy, in criticising the French Naval Estimates of 1878, spoke in terms of condemnation of the system adopted in France, the construction of too many ships being attempted at the same time, and the completion of each vessel being proportionately delayed. In the year 1878 one second-class ironclad, one armoured coast-defence vessel, one gunboat, and four small sloops and one transport were completed, while five ironclads, two armoured coast-defence vessels, and two gunboats were commenced, the amount of work executed upon each of the new vessels varying from $\frac{2}{10}$ ths to 10 and $\frac{2}{10}$ ths. M. Lamy complained that the result of this policy was that each ship occupied too long in construction, the latest ideas being rarely embodied in the completed design.

M. Lamy.
Delays in
construction.

M. Lamy's speech in the Chambers contained the following observations:—

'La lutte qui s'est engagée entre le canon et la cuirasse a lancé l'artillerie dans une voie de progrès gigantesques, continus, dont chacun est marqué par un changement dans la structure des navires. Le temps n'est plus aux escadres composées de navires de même modèle. Chaque navire est un type supérieur à ceux qui l'ont précédé, inférieur à ceux qui vont le suivre. Enfin, les bâtiments sont en fer; par suite, la lenteur des constructions a cessé d'être nécessaire.

'Rev.
Mar.
March
1876,
p. 781

'Quelle conclusion a été tirée de ces faits par toutes les marines du monde et par notre conseil d'Amirauté?

'C'est qu'il faut ne construire à la fois qu'un très-petit nombre de types, mais quand on se résout à en construire un, le pousser avec une grande activité, de façon à produire dans les conditions les plus

rapides un navire qui, pendant un instant au moins, soit le dernier terme du progrès.'

Commission on French Navy Estimates, 1879.

The report of the Commission on the French Budget for 1879 calls attention to the striking differences in the time occupied in building ships of similar type in the private and public shipbuilding yards. The 'Foudroyant,' armoured ironclad of the first class, was built by the State in five years. The 'Duperré,' a more important ship, was built in a private yard in three years and six months. The 'Caiman,' coast-defence ship, was built by the State in five years; the 'Requin,' of the same type, by a private firm in three years and a half. The 'Duquesne,' first-class cruiser, was finished in six years; the 'Tourville,' a sister ship, was built by a private firm in two years and nine months. The report contains a large number of examples equally remarkable.

General expenses.

The total amount of votes six and ten, for the ten years 1869-79, was 33,202,580*l*. The total expenditure, direct and indirect, on the building of contract-built and dockyard-built ships, and on repairs, was 28,621,944*l*. The difference between the total sum voted by Parliament and the actual expenditure on ships shows that the general expenses of the yards are a serious drain on the Naval Estimates.

Iron should be substituted for wood.

The excessive expenditure on repairs would be much reduced by the gradual substitution of iron for wood-built and composite vessels. Iron ships are now universally preferred by mercantile shipowners, not only for their superior strength, but because they are less costly to maintain. The want of durability in the wooden ironclads has been shown by the disappearance of the large fleet of ships of that class, which we originally created. It has been proved in France by the enormous expenditure in repairs.

Letter of Sir E. Reed, February, 1876.

In a letter to the *Times* on February 28, 1876, Sir E. Reed called attention to this subject :—

'The greatest waste and decay has been going on, as was clearly foreseen, among our wood-built ironclads. When ironclads came into vogue we had many partly built wooden line-of-battle ships on the stocks, and vast stores of Italian and English oak adapted for the construction of many more. It was well understood that iron was much more suitable for the purpose than wood, and our first ships ("Warrior," "Defence," &c.) were built of iron. But the temptation to utilise the timber hulls and timber stores was very great and very natural, and the Admiralty of the day yielded to it, knowing perfectly well that wood-built ships sheathed in iron armour would

be short-lived. We can scarcely blame them; I less than most persons, for at my request, and when I had placed the design of the iron "Bellerophon" in their hands, they ceased entirely to build new armoured ships in wood, and never afterwards even converted more than one or two of those remaining on the stocks.

'The official *Navy List* for this year indicates how soon the wood-built ships have decayed. The following wood-built ironclads are there relegated to Harbour Service, which means no service at all, or next to none :—

	Tons	Indicated horse-power
Caledonia	6,832	4,538
Enterprise	1,350	692
Lord Clyde	7,842	6,064
Ocean	6,832	4,244
Prince Consort	6,832	4,234
Royal Oak	6,366	3,704
Royal Sovereign	5,080	2,436
Zealous	6,096	3,448

'The rapidity of the decay of such ships may be inferred from the fact that two of the above ships were ordered to be built from my drawings a few months before I was appointed Chief Constructor in 1863. One of them, then on the stocks, was completed subsequently. (By some neglect of the editor of the *Navy List*, two at least of the above vessels appear also in the list of efficient ships, from which he seems to have omitted to remove them; they therefore appear twice over.) I must add to the above list of decayed wood-built ironclads the following vessels, which, although not yet officially reduced to the class of harbour ships, are built of wood, have undergone more or less decay, and must very soon disappear from the efficient list :—

	Tons	Indicated horse-power
Favourite	3,232	1,773
Lord Warden	7,842	6,706
Pallas	3,787	3,581
Repulse	6,190	3,347
Research	1,741	1,042
Royal Alfred	6,707	3,434

It may not be out of place to mention here that the Austrian authorities have lately replaced the wooden sides of three of their ironclads with iron sides, adding additional armour in vital places—a conversion which Herr Romako states 'will not cost more than the building of one ironclad.'

The difference in the cost of maintenance of wood and iron ships is brought very clearly into view by Mr. W. H. White in his *Manual* Mr. W. H.
White.

of *Naval Architecture*. The deterioration in a wood ship is not far from twice as great as that in an iron ship in equal times. The usual allowance for wood ships is that in from twelve to fifteen years the casual repairs to meet ordinary wear and tear of the hulk, apart from accidents, would about equal the first cost; for iron ships the corresponding term would probably be twice or thrice as great. During the eight years 1866-74 over 124,000*l.* in all was spent upon the 'Warrior,' an average annual outlay of about *one-twenty-fifth* part only of the first cost. The same proportionate outlay occurred also in the 'Defence' and 'Resistance.' The 'Bellerophon,' in eight years, only had spent upon her *one-thirty-third* part of the first cost, and this included repairs after her collision with the 'Minotaur.' In their first five years of service the 'Invincible' class cost annually only about *one-eightieth* part of their first cost.

The wood or composite construction has hitherto been preferred for cruisers, because the copper sheathing was held to be essential to prevent fouling. The greatly increased facilities for docking on many foreign stations make this consideration less important than formerly. On the China station, for example, vessels can now be docked at Hong Kong and Singapore, Whampoa, Shanghai, Nagasaki, and Yokohama. In the Mediterranean we possess ample accommodation at Malta. On the East India station large graving docks exist at Suez, Bombay, and Calcutta; on the Australian station at Melbourne, Sydney, and Otago; on the Pacific station at Esquimaux and San Francisco; and on the North American station at Bermuda and Quebec. Vessels to be employed in the training-service will rarely be absent from England more than six months.

Remarks as
to the ex-
pediency of
shorter
commis-
sions.

The great expenditure on repairs in the Navy, as compared with the mercantile marine, has been justified on the ground that when a ship is being prepared for a commission of five years it is necessary to condemn many things, which might be passed as serviceable and reliable for a more limited period. This suggests for consideration whether the ordinary duration of a foreign commission might not be curtailed, without disadvantage to the public service in other respects, and with a distinctly beneficial result in reducing the wasteful expenditure on repairs.

It would be a boon to the seamen if Her Majesty's ships were to remain a shorter time on foreign stations. The following statements are from evidence given before the Manning Committee of 1859. Sir Charles Napier said: 'I do not see the necessity for keeping ships in the Mediterranean for three or four years. If you had a Channel Fleet they could be relieved occasionally, and the men might come

home to see their wives and families. This would give great satisfaction.' Sir Alexander Milne pointed out that in the merchant service the men were never out of England more than eight or ten months, whereas in the Navy they might be three or four years away. He believed that this was one cause of the dislike of the naval service. Admiral Milne said: 'I think that the young seamen do not like being kept long in the home ports. They have equally a dislike to long foreign service, that is, to periods of five years on a foreign station.' Admiral Denman said: 'One cause of the unpopularity of the Navy is the great length of time ships are kept abroad.' I should propose, therefore, that no ship should, under ordinary circumstances, be kept on a distant station for more than two years and a half. If kept longer, the emergencies of the case could be provided for by an increase in pay.' Opinions were expressed in the same sense by men who had risen from the ranks. Mr. Smith, Boatswain, of Pembroke Yard, when asked: 'Have the seamen of the fleet any just cause of complaint?' replied, 'I can state one or two, one being the great length of time they are kept on foreign stations.' So, too, Mr. Brown, shipping master at Limehouse, speaking of coasting sailors, said, 'Their great objection to the Navy is the long period on the foreign stations. Were they relieved oftener, the service would be much more popular.'

In the old days of sailing ships complaints were constantly heard of the irregular detachment of vessels for foreign service, and the almost interminable periods they were kept away from home. The late Lord Cochrane stated in the House of Commons that men-of-war had been retained on distant stations for upwards of fifteen years at a time, and he gave one instance of such a vessel returning home with but one of the original crew on board. Admiral Jurien de la Gravière, in his Essay entitled *La Marine d'Autrefois*, says: 'There is nothing more dreary and monotonous than the ordinary routine of service on foreign stations. Ships of war revolve, almost always, in the same circle, visiting every year the same localities. Our foreign naval stations,' he says, 'are not only useless, they are positively cruel. It has been proposed to substitute for a permanent establishment of ships on particular stations, cruising squadrons. Such is the general wish of the Navy, and to such a proposal I give my unreserved adhesion.'

The present practice of keeping ships four years on a foreign station had its origin in days long past, when months were occupied in voyages that are now performed in an equal number of weeks. There may be numerous instances in which a ship could be sent abroad for a period of two years at a light expense, whereas it would

be necessary to spend three or four times as much in order to keep her out eighteen months longer. More frequent change of scene and employment would cheer the spirits and improve the health of officers and men. In making long passages at shorter intervals valuable experience would be gained.

Deterioration of boilers.

The premature deterioration of boilers is one of the most serious causes of wasteful expenditure in the Navy. Taking the period 1869-78, Mr. Hamilton points out in his recent report that, whereas only fifty-six boilers were fitted in the first five years, in the last five no less than ninety-three were supplied to the Navy. Six boilers were fitted to armoured ships in the first period, while twenty-one were so fitted in the last period of five years. Here, as the *Times* observes, we have a definite clue to much of the increased expenditure in repairs, which has been making its mark on the cost of the Navy generally during the past five years.

In justice to the Admiralty it should be pointed out that the recent increase of the fleet has been much more considerable in the armoured than the unarmoured ships. The number of ships increasing year by year, it follows that in the second five years a larger number of boilers would require renewal than in the first five years. Further, most of the engines of the earlier ships being fitted with common condensers, the boilers had an average life of about twelve years; while the engines of the later ships, having surface condensers, the boilers had an average life of about eight years only.

Again, of the 21 ships fitted in the second period, thirteen were fitted in the two years 1877-78, at a time when it was determined, on account of the state of affairs in the East, to expedite the repairs of ships and the fitting of new boilers, in order that all available ships might be ready for service if required.

Thus the increase for armoured ships appears to be mainly due to three reasons:—

- (1.) The increased number of ships.
- (2.) The introduction of the surface condenser.
- (3.) The unusually large number of ships brought forward for service in the two years 1877-78.

The increase in the number of unarmoured vessels fitted with new boilers in the second period is also owing in a considerable degree to the increase in the number of vessels. Twenty-two were launched in the years 1867 and 1868, and in each of the years 1876 and 1877 17 vessels were fitted with new boilers.

The removal and renewal of boilers involve a large outlay in the

shipwright's department, amounting in the case of a first-class iron-clad to from 40,000*l.* to 60,000*l.* The previous loss of speed, and the possibility that ships may be under repair when they are urgently required for service, are still more grave considerations.

There seems reason to believe that greater durability might be insured if due skill and care were exercised. Impressed with this conviction, the late Board of Admiralty appointed two committees, one under Sir Cooper Key, to report on the *personnel* of the mechanical department of the Navy, the other under Admiral Sir George Elliot, with instructions to ascertain the causes of decay in boilers, and the best means of preserving them. Their inquiries revealed a state of things which was far from satisfactory. The appendix to the Report of the Boilers' Committee show that no less than fifty-eight ships, including several armoured vessels, had received new boilers in less than six years, or practically after serving only one commission. In six cases the boilers had been renewed in less than four years.

Appoint-
ment of
committee
on me-
chanical
officers and
boiler
manage-
ment.

Results of
their in-
quiries.

Our information is brought down to a still later date in a return obtained in the last Session of Parliament by Sir John Hay. Between January 1, 1869, and January 1, 1879, 166 ships had been fitted with new boilers, and in no less than sixty instances after a service of under seven years. In fifteen ships the boilers were renewed after five years; in twenty-two ships after less than seven years' service. The endurance in these sixty cases was one-third less than the average in the mercantile marine.

Sir John
Hay's re-
turn.

Among the heaviest repairs included in Sir John Hay's return are the armoured vessels:—‘Triumph,’ 55,868*l.*; ‘Audacious,’ 47,077*l.*; ‘Invincible,’ 68,231*l.*; ‘Iron Duke,’ 63,750*l.* In none of these cases had the boilers been on board more than six years.

Armoured
ships.

Turning from ironclads and unarmoured ships to despatch vessels, the expenditure on repairs to the ‘Helicon’ was 16,294*l.*; ‘Lively,’ 19,947*l.*; and ‘Salamis,’ 25,508*l.*; in each case after *less than five years' easy service.*

If the repairs required were of such a costly nature, the presumption is strong that it would have been cheaper in the end to have purchased new ships. The ‘Lily’ and ‘Violet’ have lately been built by Messrs. Laird for the North-Western Railway for the service between Holyhead and Dublin, at a cost of 100,000*l.* They have a tonnage O.M. of 1,626 tons, 3,000 indicated horse-power, and steam twenty miles an hour. With some modifications bearing on their coal-carrying capacity, they could have been adapted for any service on which the Admiralty despatch vessels are employed, and the

expenditure of 50,000*l.* in the purchase of a new vessel would certainly have been more advantageous than an outlay of 33,000*l.* in the repair of the 'Enchantress.'

Superior
boiler en-
durance in
mercantile
marine

Prior to the improvements recently effected in the system, the endurance of boilers in the Navy was considerably shorter than in the mercantile marine. With rare exceptions the average endurance of the boilers in the principal Atlantic and other services is about nine years, and the mileage run exceeds 500,000 miles. The report of the Boiler Committee contains a tabular statement, giving some important statistics obtained from the principal Atlantic and other services. The following figures are taken from a return furnished by the Inman Company :—

	When Boilers put on board	Mileage run	Days steam- ing	No. of times steam raised	Present condition of Boilers. Will last for
City of Brooklyn	Dec. 1868	316,000	1,113	104	4 yrs.
City of Paris	Dec. 1865	471,000	1,564	158	2 yrs.
City of London	Jan. 1867	366,000	1,340	118	3 yrs.
City of New York	Feb. 1865	390,600	1,526	126	1 to 2 yrs.
City of Antwerp	Nov. 1866	530,400	1,400	122	2 to 3 yrs.

The ships included in the above return were never laid up, the necessary repairs having been effected between the voyages.

Troopships.

The work done by troopships is decidedly less severe than that of an ordinary merchant steamer. They make long passages at uniform and moderate rates of speed, and have ample time in port for all necessary repairs. But even in ships of this class the endurance of the boilers is unequal, and compares unfavourably with the mercantile marine. The Indian troopships make on an average two voyages annually, yet no less than 28 per cent. of their original cost was expended on repairs in the first ten years of their existence. New boilers were supplied to the 'Tamar' in 1876 at a cost of 45,000*l.*; and they have lately undergone extensive repairs in order to make them last another two years. On the other hand, the 'Himalaya,' which received new boilers in 1874, at a cost of 30,000*l.*, is still efficient. The expenditure on both these ships has been very great. Between January 1, 1874, and January 1, 1879, the cost of repairs to the 'Himalaya,' 4,490 tons, was 54,135*l.*; 'Tamar,' 4,857 tons, 66,867*l.*; and 'Orontes,' including lengthening, 141,776*l.* The 'Orontes' was an old-fashioned trooper, and a new and much more efficient vessel could have been built for the money expended on the alterations. The system of replacing worn-out ships by new ships,

the old ships being taken in exchange by the contractors in part payment, is universally adopted by the Cunard Company, and might with great advantage be followed by the Admiralty.

It has been urged that the introduction of surface condensers, and the use of high-pressure steam in compound engines, have shortened the life of boilers. Let us again refer to the experiences of the mercantile marine. The returns supplied to the Boiler Committee by the 'White Star' line give particulars of three ships fitted with superheaters, the steam being superheated to a temperature of 300°. The mileage already run varies from 169,000 to 131,000 miles, and the number of days under steam from 625 to 460. The estimated duration of the boilers is in each case six years, and this period may be considerably exceeded.

Surface
condensers.

The responsibility for repairs must be divided between the Admiralty, the executive, and the mechanical officers. The engineers are changed too often. In the case of the 'Nymph' three engineers in succession were in charge during one commission of four years and four months. A totally different system prevails in the mercantile marine. The plan adopted by the Peninsular and Oriental Company was described by Mr. Lamb, the Superintendent, in a paper specially prepared for the information of the Boiler Committee. The chief engineer and his juniors are appointed as soon as the ship is completed. They are promoted in the same ship as far as possible, and if a change is made, only one engineer is removed at a time, so as to retain as many as possible of those who are familiar with the engines and boilers. Mr. Lamb is of opinion that, if a similar course were adopted in Her Majesty's service, it would be most advantageous.

Engineers
changed
too often.

The utmost care should be exercised in the selection of the best materials for the construction of boilers. No policy can be more extravagant than that of attempting to save weight by the use of light boilers. The boilers made at the dockyards are much cheaper than those supplied by contract. In some cases the saving has amounted to 6*l.* per horse-power. The boilers of the 'Black Prince,' made at Portsmouth in 1873, cost 13,451*l.* Similar boilers made at the same time by contract cost 20,750*l.* It is a subject worthy of the most serious consideration whether it might not be desirable to make more boilers in the dockyards. The greatest pains are taken by private companies to secure the use of the best materials. The steel plates for the fast Channel steamers the 'Lily' and the 'Violet,' lately built by Messrs. Laird for the London and North-Western Railway Company, were supplied from Crewe.

Boilers
should be
made at
the dock-
yards.

Loss of
speed and
deteriora-
tion of
boilers
from
cramped
engine and
boiler
space.

The limitation of space in the engine-room of men-of-war is another source of difficulty. In ironclads it is contracted as much as possible, in order to reduce the area of side requiring protection by armour. In unarmoured vessels, in order to keep the machinery and boilers below the water-line, the engine-space is deficient in head room. The 'Thistle' class of twin-screw composite gun vessels have been largely employed on the China station. It has been impossible to preserve the planking beneath the boilers; because no room has been left for men to creep through, in order to effect the necessary repairs.

Want of space may lead not only to deterioration of boilers, but to loss of speed. Similar failures from a like cause have not been uncommon. The same defect may sometimes cause an almost unendurable state of things as regards the temperature of the stokehole, especially in small ships. In the 'Sea Gull,' commissioned in 1867 for service on the West Coast of Africa, the temperature of the stokehole, on the occasion of the full-speed trial at Plymouth, was 138°.

The complicated entanglement of design and difficulty of access to every part of the engine, which constitute the special defects in the machinery built for the Navy, are due to the restrictions as to space imposed on the builders, with a view to protection from the risks of battle. It is worthy of consideration whether it might not be desirable to give more space to the engine-room and boiler, and to protect these highly vulnerable parts, not by keeping everything below the water-line, but by a belt of armour on the inner side of the bunkers.

A ship of war must necessarily be designed specially for the day of battle. If roomy quarters be provided for the crew, if ample space and weight be allowed for the engines and boilers, and if large coal-carrying capacity be provided, all very essential matters viewed individually, a large vessel must be built. Increase of size diminishes handiness and increases cost, and much importance is always naturally attached to the question of cost. Special consideration has therefore been always given to economising weight and space for engines and boilers.

Then again, protection of the engines and boilers from shot has always been considered of paramount importance, and to ensure this as far as possible the engines of the Navy have been mostly made on the horizontal plan. This is not so good as the vertical plan, especially for large engines, either in respect of good working or of accessibility, and the length of stroke is more limited. But if a ship of war were to go into action with the cylinders standing up unpro-

tected, or with a line of steam-piping or the top of a boiler exposed to shot, she would, against modern artillery, be speedily at the mercy of her enemy.

In merchant ships the weight allowed for engines and boilers is always ample, and the space available is also ample ; vertically, indeed, it is unlimited. These facilities render the designing and construction of machinery for merchant ships a far easier task than the designing and construction of machinery for the Navy. The fair view of the case would be rather, whether the designers of machinery for the Navy had done the best they could under the conditions imposed.

The following comparison will show the great difference between the two types of machinery. The engines of the Indian troopship 'Euphrates,' made a few years ago by Messrs. Laird, are exactly like the engines this firm has made for ships belonging to the Pacific Company, the National Company, &c., sailing from Liverpool, which have been very successful at sea. The engines of the 'Euphrates' developed on trial 3,906 indicated horse-power, and the total weight of the machinery, including water in the boilers, is 1,007. The engines of the 'Iris' were made about the same time, and the steam pressure is the same. The total weight of the machinery of the 'Iris,' including the weight of the water in the boilers, is 1,015, or practically the same as the weight of that of the 'Euphrates;' but the engines of the 'Iris' developed as the average of a six hours' trial 7,061 indicated horse-power, or 80 per cent. more power than those of the 'Euphrates.'

Turning from the Admiralty to the executive officers, the engineers complained to the Boiler Committee that the work in their department was neglected, because the stokers were constantly taken away for drill on deck. The smaller the ship the more serious did this objection become.

Complaints of engineers. Stokers taken for other duties.

Mr. Trail, the Chief Surveyor of the Board of Trade, suggested that orders were sometimes given from the deck, without knowledge of the evil consequences which must ensue, through the sudden contraction and expansion, when sufficient time is not allowed for getting up or letting down steam. The subject of steam should not be neglected in the early instruction of naval officers. All executive officers should go through a course of steam, which would qualify the captain of a man-of-war to exercise a valuable supervision as well in the engine-room as in all other departments of his command.

Insufficient time for raising steam.

Sometimes the instructions issued by the Admiralty have not been obeyed with intelligence and discretion. Economy in fuel, for example, is enjoined ; and as the formation of scale, while it pre-

Instances of injudicious application

of rules laid
down by
Admiralty.

H.M.S.
'Audacious.'

Sir Edward Reed
on efficiency of
naval engineers

serves the boilers, tends also to increase the consumption of fuel, some engineers have prevented its accumulation altogether, and so caused a rapid deterioration of the boilers. Instances have occurred in the Navy where both systems have been tried in the same ship. The boilers of the 'Audacious' were taken out, after four years' service in the Coastguard, the vessel having cruised only occasionally in the summer, working with from one-third to two-thirds of her boiler-power. At one period, as the Boiler Committee were informed, an endeavour had been made to form some scale in her boilers; at another, the desire had been to keep them quite fresh. It is obvious that of these two systems of treatment one must have been wrong. It further appeared from the evidence of Mr. Robinson, that the boilers had undergone rapid deterioration from neglect, in the interval before the engines were taken over from the contractors.

In his well known work, *Our Ironclad Ships*, Sir Edward Reed has strongly insisted on the imperfect acquaintance with their duties which was sometimes exhibited by engineers in the Navy. The following passages are taken from Sir Edward Reed's book:—

'One of the results of the publication of this work will, I trust, be to induce persons to look a little more closely than heretofore to the true causes of the different *performances* of the ships, both under steam and under canvas. It is not only idle, it is contrary to common sense and common experience, to visit upon the designer all those shortcomings which are obviously the consequences of imperfect management. I appeal to the experience of the best seamen in our Navy, when I ask if ships do not perform very differently in different hands. The sailing of a ship is by no means an art in which all persons are equally skilful. In like manner the performances of the ships under steam are, as I have shown in the text, subject to the greatest possible variations by differences of management. If allowed a month or two at sea under steam, with the necessary coal for the purpose, and with freedom from external control, a good captain and engineer would ascertain the number of engine revolutions required for every grade of speed with the greatest ease and nicety, and would add to this knowledge all those nice adjustments and minor modifications of the engines, which would not only prevent these derangements, which sometimes result in large repairs, but would also lead to great economy of fuel, of lubrication, and of labour. Another month or two of cruising alone under canvas would enable officers to bring out the best qualities of their ships, and would avoid those strange anomalies and discrepancies which abound in some reports of the squadron sailings of our ironclads.'

1 The Engineer-in-Chief, in his report to the Boiler Committee, attributed the rapid deterioration, which had occurred in numerous instances, to incompetence and neglect. In the 'Daphne,' described as 'the worst case we have ever had,' the boilers were condemned in less than three years. In the corvettes 'Eclipse,' 'Nymph,' and 'Vestal,' they were removed after one commission. The 'Sirius,' after receiving new boilers, and being thoroughly overhauled, at a cost of 27,000*l.*, was returned to Keyham in two years, so thoroughly broken down that the engines were removed for refit. In the 'Niobe,' on the other hand, the amount spent in repairs, during her first commission of more than four years, had been only 134*l.*, and, when paid off at Bermuda, the boilers were in a good state of repair. In two other corvettes of the same class, fitted with the same machinery, the boilers were found in equally good condition for a second commission.

Mr.
Wright's
report to
Boiler
Committee.

Mr. Wright concluded his report with the just observation that, where such widely different results are attained, it is clear that the endurance of the boilers mainly depends on the management of the engineers in charge. He believed that some engineers in the service were imperfectly acquainted with the causes of corrosion, and he proposed that further instructions should be issued, and that a more careful supervision should be made of the elaborate returns periodically sent in to the Admiralty by the engineers in charge of Her Majesty's ships.

All Mr. Wright's suggestions are valuable, and should be adopted. New regulations have been issued, and the engineers have now been made acquainted with the most effective methods for the preservation of boilers; but it is vain to indulge the hope that efficiency can be secured in every engine-room in the Navy by the inspection of returns prepared by the same individuals, whose conduct and management are to be subjected to criticism. Success in the department of the sea-going engineer is a question essentially of detail, and it has been well said by M. Turgot that it is impossible to direct, by fixed rules and close and constant inspection, a multitude of operations too wide in their range to be brought under the review of the central authority, and depending on a variety of conditions which can neither be controlled nor foreseen. It is better to rely on the sense of personal and direct responsibility, enforced by rewards for merit and punishment for failure, rather than on regulations of a more or less arbitrary character. The dismissal of incapable men, the prospect of accelerated promotion as the reward of skill and devotion to duty, and a thoroughly practical training, will prove more

effectual remedies for the occasional failures in the engine-room in Her Majesty's ships than volumes of new regulations.

Training of
engineers.
Present
system

Experience and care on the part of engineers, who have received a thorough preliminary training, are absolutely indispensable. It becomes, therefore, of great importance to ascertain how far these qualities are secured under the present system of training. Under the existing regulations, a young engineer commences his naval career with an examination on entry. Having passed the examination, the engineer student spends six years in the dockyards, combining, as far as may be, some practical training with theoretical instruction in the schools. His course of education concludes with nine months' study at the Royal Naval College.

Engineers
appointed
to ships
without
previous
experience.

It is the great defect of the present system that young engineers are appointed to sea-going ships, with no previous experience in the management of machinery at sea. In time of peace, when ships are only occasionally under way, and usually steam at a low speed, the chief engineer can give special attention to the instruction of junior engineers. He could not do so in time of war. In the dockyards many young engineers are attached to ships undergoing repairs, rather in the capacity of watchmen, for the prevention of fire, than as mechanical officers. The necessity for more practical experience in sea-going ships has been recognised by the Committees which have been lately engaged in the reorganisation of the mechanical department of the Navy. While wisely advising that the engineer officers in commissioned ships should be reduced in number, and replaced by artificers, Sir Cooper Key's Committee proposed that junior assistant-engineers, on leaving college, should be appointed to troop and store ships in addition to the complement for six months or longer.

Recommendations
of Sir
Cooper
Key's Com-
mittee.

Engineers
cannot
have the
same prac-
tice in the
Navy as in
the mer-
chant ser-
vice.

From the nature of the duties it is impossible to give to the Navy in time of peace that practical experience in driving powerful machinery at a high speed in all weathers, which is obtained in the merchant service. Many engineers spend years attached to harbour ships, or in ships which are seldom under steam, and are still more rarely driven at full speed. It should be the policy of the Admiralty to keep down the number of engineers, so that it should not exceed the strict requirements of the service, looking to the mercantile marine to supply the additional engineers, who would be required in the event of war.

An effort should be made to obtain further opportunities for engineers of acquiring practical experience. There should be no insuperable obstacles to be encountered in the attempt to pass a

certain number of our naval engineers, for a limited period of service, through the mercantile marine. The plan has been suggested by some authorities of great practical experience. In a paper by Mr. Ravenhill, read at the meeting of the Institution of Naval Architects, held at Glasgow in 1877, the following remarks occur: 'All those who are in any way conversant with the Royal Navy must admit that such experience as the commercial marine affords cannot easily be obtained in Her Majesty's ships. The transport service is limited, and the hours named for departure are not always adhered to. The mail steamers are timed to leave at a certain hour, and even if all is not in perfect order the chief engineer must be ready. Such a school can alone afford the training a sea-going engineer should receive, and I am sanguine enough to hope that the day is not far distant when some arrangement will be made between the Admiralty and our large steam companies, for a junior Royal Naval engineer to have an opportunity afforded him, if only for a period of twelve months, of obtaining experience with machinery, at times pressed to the utmost, in all seasons and in all weathers.'

Naval engineers might be trained in merchant service.
Mr. Ravenhill.

Sir E. J. Reed warmly supported Mr. Ravenhill's proposition, saying that he thought it most desirable that the officers of the Royal Navy should be made familiar with the practice of the mercantile marine. He refused to admit that the suggestion was beset with insuperable practical difficulties. In time of peace naval engineers can never have an opportunity of witnessing such performances as those of the mail steamers, making regular passages throughout the year between Liverpool and New York, at an average speed sometimes exceeding 16 knots, or those of the ships which now accomplish the voyage between St. Vincent and Australia without easing the engines.

Sir E. J. Reed

Valuable experience in Atlantic steamers.

The engineers employed in the great mail services are required not only to maintain the highest speeds at sea, but to examine and repair the machinery under their charge with the utmost possible expedition. In the Atlantic trade, large steamships run for years with intervals of a week, and sometimes less, in a home port between their repeated voyages. Expedition in the repair of machinery is not required in the Navy in time of peace. It might be of vital importance in war. The young engineers of the Navy have much to learn, not only in developing the capabilities of machinery, but also in the management of boilers. Whatever may be the result of the scientific researches of the Admiralty, it would be an important step in advance, if the practice of the Royal Navy were assimilated to that of the most successful services in the mercantile marine.

Rapid repairs in merchant service

Experience in boiler management.

Social
claims and
practical
duties of
engineers.

The conflict between the social claims of the new class of engineers in the Navy and the practical duties they are engaged to discharge came out very clearly in the course of the recent departmental inquiries.

Mr.
Gordon.

‘The following question and answer are taken from the evidence of Mr. Gordon, superintending engineer of the West India Steam-packet Company. Mr. Gordon, when examined by the Boiler Committee, was questioned as follows:—11,815. Are there any remarks you can make from your previous experience in different managements of boilers, which you think would be of service to the Committee?—With regard to surface-condensing boilers, the main and only thing is to pay particular attention to keeping the boilers clean. Get a good practical engineer, who is not afraid of dirty work, and will see that the work is properly done, and put plenty of zinc plates in your boilers, and see that your feed does not go through copper tubing. I think, if you adopt these precautions, you will have a good lasting boiler; but if you employ a careless man or a man too big for his work, and the business is not attended to properly, your boilers will be done for in a year or two. You must have men who will attend to their work, or else all the improvements which you make are lost, through nothing being followed out.’

General re-
marks on
the articles
and evi-
dence
quoted.

It is generally admitted in the Navy that the engineers entered under the old system are among the most valuable in the service. They were entered under the conditions of the Admiralty Circular of 1847, which required that candidates for appointments should prove their practical ability as mechanics, and be so far acquainted with the elements of theoretic mathematics as to understand the general principles of steam machinery. The requirements of the Board of Trade at the present time do not exceed the qualifications demanded by the Admiralty in 1847; and the ample sufficiency of this limited examination is fully attested by the perfection of result in the 3,000 ships under the management of the 8,500 engineers of the mercantile marine. In punctuality, immunity from breakdown, regularity of speed for long distances, and continuous hard work, their performances cannot be excelled.

American
Naval au-
thorities
propose
that train-
ing of
cadet en-
gineers
should be

Cadet engineers are trained for the United States Navy at the Academy at Annapolis, and great pains are taken to make the instruction as practical as possible. The department possesses a pair of large marine engines, with boilers attached, which are worked under steam by the cadets themselves. But even with these advantages the Board of Visitors have reported that the training is

incomplete, and they have recommended that the most promising cadets should spend one or two years in the engineering establishments of Great Britain. completed in England.

Entire success, as it was urged by the *Broad Arrow*, is impossible under any regulations which necessitate the whole of a naval engineer's education being obtained at a place where, throughout the whole course of his studies, he never sees an engine made.

Less risk would be encountered of entrusting the costly machinery of our ships of war to unpractised hands if the number of engineers in the Navy were reduced, and the means of expansion provided from a reserve of engineers. The 3,500 engineers belonging to the French Navy are chiefly employed in the merchant service, and would join the Navy in full practice whenever called upon to do so. It is not wise to keep more engineers in the Navy than it is possible to employ regularly in the duties of their profession. On the other hand, it would be unreasonable to look to the merchant service to furnish engineers of high qualifications in answer to an unexpected summons. A reserve of engineers and stokers should be formed, composed of experienced men, and thus, by a small periodical payment, provision would be made for the eventualities of war, without encumbering the Navy with officers whose pay and pensions are a serious additional charge to the Navy, but whose numbers are so excessive that it is impossible to deal with individuals on a really liberal scale. A Naval Reserve of engineers and stokers.

Since the introduction of artificers into the service their number has been steadily increasing, while the engineers have been proportionately reduced. There seems reason to believe that the movement might be carried considerably further. The duties would be done more efficiently, and at a reduced scale of expenditure, by substituting mechanics, who would be satisfied with the *status* of warrant officers, for men of higher education and less practical skill, whose social aspirations are inconsistent with the nature of their duties. The fluctuations of numbers are shown in the following returns:— Proportion of engineers reduced, and artificers increased.

Return, showing how the Engineer Officers at present in the Service are employed.

Rank	Serving in sea-going Ships, including 1st Reserve Ships	Serving in Ships in the Reserves, at the several Ports	Dockyards, Torpedo Service, &c.	At the Royal Naval College	Half-pay	Borne for disposal in the Reserves	Totals
Chief, and inspectors of machinery . . .	2	3	3	—	2	—	10
Chief engineers . . .	117	54	20	—	29	—	220
Engineers and assistant engineers . . .	388	60	33	19	6	13	519
Engineers and assistant engineers for temporary service . . .	26	2	—	—	—	—	28
Totals . . .	553	119	56	19	37	13	777

June 15, 1880.

(Signed) G. FINLAISSON.

Number of Chief Engine-Room Artificers and Engine-Room Artificers in the Navy, including those in Indian Troopships.

Borne	Chief E. R. A.'s and E. R. A.'s
April 1, 1872 (actually borne)	176
" 1873 "	204
" 1874 "	224
" 1875 "	282
" 1876 "	312
" 1877 "	429
" 1878 "	578
" 1879 "	631
" 1880 (partly estimated)	610
June 1, 1880 "	612

(Signed) R. G. C. HAMILTON,
Accountant-General, &c.

The following table gives a comparative statement of the numbers borne :—

	Artificers	Engineers
1872	176	974
1873	204	964
1874	224	953
1875	282	920
1876	312	903
1877	429	888
1878	578	817
1879	631	835
1880	610	777
June 1	612	—

The mechanical branch requires a certain number of superior officers. They should be formed into a staff corps, in some respects answering to the French *génie maritime*. A staff officer of naval engineers should be attached, as in the French Navy, to every flagship, and one or two should be appointed to each first-class ironclad. In the subordinate ranks skilled mechanics would be more useful.

There should be a careful inspection, at least once a year, of the boilers of every ship in commission by a superior engineer officer. Were these surveys carefully made at sufficiently frequent intervals, it would be impossible for a ship to arrive in England, at the close of her first commission, with the boilers worn out in three years and a half; the only explanation afforded being that the engineer had kept the boilers empty, and that, as he had not received the report of the Boiler Committee, he did not anticipate the mischievous effects which would result from the improper system he had adopted.

Inspection
of boilers.

It is considered essential, in order to maintain the efficiency of Her Majesty's ships, that they should be periodically inspected in gunnery and seamanship, and that the whole internal economy of the vessel should be brought under the eye of the superior officer. The inspection of the boilers and machinery should form an essential and prominent feature of the general inspection by the Admiral in command. It is the duty of the gunnery officer of the flagship to inspect in gunnery, and on the same principle an inspector of machinery, or the chief engineer of the flagship, should attend the Admiral and examine thoroughly the boilers and engines. The report of the inspecting officer of machinery on matters connected with his department should form an integral part of every inspection. Orders to this effect have been recently issued.

Periodical
inspection
of ships
abroad.

The duties of inspectors of machinery, one of whom should be attached to every flagship, would not be limited to half-yearly inspections. These officers should be in constant communication with all the engineers in charge in the fleet, giving advice on all points of difficulty, periodically and closely examining the engine-room registers, going on board all the ships on the station, and inspecting the condition of the engines and boilers at uncertain intervals, taking opportunities of being present on the occasion of full-power trials, and generally assisting the Admiral to maintain the efficiency of the machinery of the fleet. The flag-inspectors of machinery should be men of the highest reputation in the service. Their posts should be the prizes of the profession.

LETTERS, PAPERS, AND ADDRESSES.

SECTION VIII.

THE STATE OF THE NAVY,

AS DEBATED DURING THE GENERAL ELECTION, 1880.

Reprinted from the 'Times.'

THE STATE OF THE NAVY,

AS DEBATED DURING THE GENERAL ELECTION, 1880.

*MR. W. H. SMITH.**Reprinted from the 'Times,' March 26, 1880.*

ON March 25, 1880, the First Lord of the Admiralty and Sir C. Russell, V.C., the Conservative candidates for Westminster, addressed a meeting of their supporters at Exeter Hall; the Right Hon. Sir J. D. Hay in the chair.

State of the
Navy in
1874.

In the course of his observations Mr. W. H. Smith said: The cost of the Army and Navy resolved itself into this—keeping the country in a condition of peace as an alternative to a condition of war. It would have been a bad thing for the peace of this country if during the last six years they had purchased economy at the cost of war. To understand that, they had only to look back to the Crimean War, and to consider the dire charge for that war in money, men, and sorrow. It had been his duty to administer the Navy during the last two years and a half, and a very anxious time it had been. Well, he read the other day a paragraph from a speech in which the condition of the Navy was referred to, and the speaker said that Sir Spencer Robinson, who had been responsible some time since at the Admiralty for the construction of ships, and whose reputation in that respect had always been of the very highest kind, had said that since 1874 matters had most gravely altered, and that our condition had become seriously worse. Now he should be guilty of a dereliction of duty if he did not notice the statement that the condition of the Navy now as compared with 1874 was enormously inferior. He believed the speaker had made a very grievous mistake. What Sir Spencer Robinson did intend to say, he was informed, was that in 1870 the condition of the Navy was satisfactory, but that in 1874 it had fallen

very considerably. The fact was that in 1870 the Liberal Government inherited, through the exertions of his right hon. friend the late Mr. Corry, a very fine fleet; but in 1874 the fleet had fallen into a very decrepit condition. He should deserve impeachment before his fellow-citizens if during his term of office he had permitted the fleet of England to fall in the slightest degree in efficiency or in strength either of material or men. The Navy of England was her first line of defence, but it had other very difficult and important duties to discharge. The Navy of England was the police of the seas. No other nation cared about the order of the seas compared with England. Wherever our ships went, there it was expected a man-of-war should be; and wherever a slave existed, there it was expected should be found a man-of-war or man-of-war's boat to release him. Many a fine fellow laid down his life on the coast of Africa simply for the duty imposed upon him by the Navy to rescue those poor miserable slaves from a life of bondage.

Mr. W. H.
Smith.

He would now read a return made to him to-day. He called to-day from the permanent officers of the Admiralty for a return of the armoured ships of England completely ready for service on April 1, 1874, and of the ships ready to go into action now on March 25, 1880. That return was made on the faith of the permanent officers of the Admiralty, of whom, strangely enough, not a single one had been appointed by him or by the Conservative Government; they had been appointed by his predecessors, Mr. Goschen and Mr. Childers. Let him not be misunderstood. He did not impute to the permanent officers of the Admiralty the possibility of colouring the return. Well, on April 1, 1874, of ironclad ships fit to go into action there was 101,044 tons. Those ships were moved by 74,908 indicated horse-power, and they had guns which at one discharge could throw 37,000 lbs. of metal. Against the 101,000 tons of ironclads in 1874, there was now 272,000 tons. Against the 74,000 horse-power then, there was now 195,000 horse-power. Against the 37,000 lbs. weight of metal which could be thrown then, there was now 111,000 lbs. That was to say, our ships were two-and-a-half times more numerous, and their weight of metal was three times as heavy as it was then. That was the result of spending more money, for he admitted that during the last six years they had spent more money than their predecessors. But there was economy which was wasteful and extravagant, and there was expenditure which was the greatest possible economy. Let it not be imagined that he imputed to the predecessor of the

Return on
state of the
Navy, 1880.

Mr. W. H.
Smith.

late Mr. Ward Hunt a desire to do anything inconsistent with his duty as First Lord of the Admiralty, but he was the victim of circumstances. Mr. Goschen was as anxious as he was to maintain the fleet in a state of efficiency, but he found that the whole thought of the Admiralty had been directed to building ships, and they had allowed the engines and boilers to become useless and ineffective. They might as well have at the railway stations a fine lot of engines ranged alongside and not one of them able to move. But the Admiralty had taken a practical course with their ships, and now they had 270,000 tons of ironclads ready for war, against 100,000 in 1874. Let it not be supposed he had any desire to attack an adversary; he was defending himself against a statement made in the North a few days ago. He would never have uttered a word had it not been for the attacks made upon him. He had always maintained that the question of the Army and Navy was a question of the country, and it was a dire misfortune that they should be made the shuttlecocks of party.

Coming now to our unarmoured vessels, frigates, corvettes, and gunboats, there were of them on April 1, 1874, 80,703 tons, moved by 72,472 horse-power. The tonnage now was 122,427, and the horse-power 133,186. That was to say, the tonnage of effective ships ready to do their duty had been increased by 50 per cent., and the horse-power by something like 60 per cent. What was the consequence? We were now in a position to discharge our duty. We were in a position to give reliefs. When Mr. Ward Hunt came into office it was not possible to relieve the ships after their regular commissions had expired, because there were not others to take their places. The condition of the boilers and engines had so deteriorated that we could not give the ships the relief they required; but now we were in a position to do so. He believed that England would require to make greater efforts still to place her Navy in a position of preponderance—not with any desire to take up a position of hostility to other nations; but we had duties to discharge which other nations had not, and therefore it was essential that our strength should be preponderating.

War ex-
penditure:
Russia,
France, and
Germany.

He was struck the other day by a paragraph which appeared in a foreign newspaper, and which showed that while in 1865 Russia spent 22 millions for warlike purposes, in 1879 she spent 36 millions; that while France in 1865 spent 17 millions, in 1879 she spent 27 millions; and that while Germany spent 10 millions in 1865, she spent 21 millions in 1879 for warlike purposes. These figures

meant very much more than appeared at first sight, because in those countries the soldier was taken whether he willed it or not ; he was taken by conscription ; he was not paid wages which he could not earn ; and the figures given did not at all express the burden upon those countries of these tremendous armaments. But they were a warning to us that we must be on the watch.

Mr. W. H
Smith.

*MR. CHILDERS.**Reprinted from the 'Times,' March 30, 1880.*

Building
and main-
tenance of
the Navy
under Mr.
Childers,
Mr. Gos-
chen, and
Mr. W. H.
Smith.

AT a meeting at Pontefract on March 29, 1880, Mr. Childers made the following observations:—

When I became First Lord, in 1868, I found that my predecessor, Mr. Corry, had decided greatly to cut down the estimates and to build at that time no more ironclads. I at once reversed this policy. It seemed to me much more important to be well ahead in building new ships with the last improvements than to patch up old ones, and I decided that some 20,000 tons of shipping should be built every year, of which 13,000 should be the most powerful ironclads. This was steadily done by myself and Mr. Goschen, who succeeded me. We built rather more, in fact, than our programme, and we spent much less in patching. Some of our most powerful ships would only be required when war broke out, and a few weeks' work would then be wanted to complete them. Some of the older ironclads had so little armour that they would not be wanted at the beginning of a war, and they, too, might be left to be put in thorough condition later on; but we pushed on our fighting power, and though it is said that we did not renew boilers fast enough, I find as a matter of fact that we did so as rapidly as our successors, who in their first three years only renewed the boilers of eight ironclads.

Now, what has Mr. Smith done? In the first place you must remember that no ironclad is yet twenty years old, which is the common life of a ship; so that, as no one can improvise a Navy, every year sees a longer list. But Mr. Smith has left out of the ironclads we built under cover of the words 'fit to go into action,' all those which we had completed all but a few weeks, as they were not wanted in peace time, and all those with their armour, which there was no hurry to get ready, and added all these to his list. So that, whereas we built some 13,000 tons a year, while he has only built

8,000 or 9,000 tons a year and only completed two of all the ships his Board designed, he would convey the impression that just the opposite is the case. We may, perhaps, gentlemen, have made mistakes, but if there is one thing more than another for which history will give us credit it is for our determination to be ahead of all the world in our fighting Navy; while the most that our successor can say is that, with far more money at their disposal, they have barely kept up with the great maritime Powers.

Mr.
Childers.

MR. G. J. GOSCHEN.

Liberals
and Conser-
vatives
equally
pledged to
maintain
the effi-
ciency of
the Navy.

AT a meeting held at Devonport the following letter from the Right Hon. G. J. Goschen, First Lord of the Admiralty under the Liberal Government, to Mr. Sellar, on naval and dockyard administration, was read:—

Unicorn Hotel, Ripon : March 25, 1880.

‘I regret extremely that I have not been able to comply with your wish that I should address the electors of Devonport. I had quite hoped to have been able to get away for two days, but I find that the great distance renders it quite impossible for me to visit Devonport during my contest here. I should have liked to have spoken on naval affairs, and to have replied to many of the unjust charges which are brought against the late Administration.

‘I have been always so adverse to bringing party spirit to bear on questions connected with the Navy and with the dockyards that I have abstained, perhaps to too great an extent, from answering party attacks with similar weapons. If I had been with you I should have endeavoured to show that the interest I took in the Navy and in the dockyards was quite as deep as what has been displayed by our successors. We, on our side, have never been profuse in expressions of what we would do for any particular class if we were in power. The promises of our opponents, on the other hand, have generally been extravagant. The men in the dockyards will judge to what extent the hopes held out to them by Conservative candidates at the last election have been realised. Without being pledged, and under no political pressure whatever, I thought it my duty in the year 1873 to raise the wages in the dockyards to an extent largely affecting the estimates. It was a time when the high prices of all materials were putting a very heavy strain on those estimates; yet, with the consent of my colleagues in the Cabinet, I proposed and carried the increase in taxes because I thought it was right. I scarcely think I have alluded to this fact in political speeches either in or out

of the House of Commons until now, and, if I recall it now, it is only in reply to those incessant charges against us of undue parsimony which are circulated in all the dockyards for electoral purposes. I would it were possible to exclude such topics from political contests; but if they are forced upon you at Devonport, you are entitled to refer to the past, though I am sure that even in the heat of the contest Liberal candidates will not follow the course of holding out hopes which neither party, as experience has shown, can fulfil.

Mr.
Goschen.

‘My recollections of my connection with the dockyards, though six years old, are still fresh enough to make me feel deeply anxious that the present contest should be decided there, as elsewhere, on purely political considerations, and not on the totally unfounded assumption that we Liberals should be less determined than the Conservatives, not only to maintain the efficiency of the Navy, but to do justice to all who are concerned in the management, the construction, the maintenance, and the manning of the fleet.’

MR. SHAW-LEFEVRE.

To the Editor of the 'Times.'

Deficiency
in the
tonnage
constructed
under the
Conserva-
tive Ad-
ministra-
tion.

SIR,—With reference to the speech of the First Lord of the Admiralty in Westminster on Thursday last on the subject of the Navy, in which he drew a comparison between the condition of ships in April, 1874, when the present Government came into office, and at the present time, I hope I may be permitted through your columns, on behalf of the late Administration, to say that I *entirely* dispute the figures which Mr. Smith produced and his method of comparison.

The comparison depends upon the opinion formed now, after six years, of a vast number of individual vessels in various conditions; and a return of an argumentative character drawn up for the purpose of a political speech gives every latitude for placing ships on one or other side of an arbitrary line which divides those which are or were fit to go into action from those which are not fit.

It would be impossible to go into full details upon such a subject, but if the return referred to by Mr. Smith is drawn up on the same plan as a return moved for by Sir John Hay last year and recently laid before Parliament, I could point out a number of vessels most unfairly put into the list of those alleged to be unfit for action in 1874, and as many most questionably placed in the list at the present time as fit for action, and which if judged of by the same test as that applied to 1874 should be excluded.

I have the more reason to complain of the method of comparison made by Mr. Smith, as during the last days of the late session he refused to give me a return which would have enabled the public to judge of the actual progress made in the building of armour-plated ships in the dockyards and by contract during the time the present Government has been in office.

A recent return had shown that 96,397 tons of new ships had been built in the dockyards and by contract (irrespective of the

vote of credit of 1868) in the five years 1869-73, and that of this tonnage 62,698 were armour-plated; while for the last five years the total tonnage was 94,894, and of armour-plated vessels only 49,697 tons, showing a deficiency in the last period of 13,000 tons.

Mr. Shaw-
Lefevre.

I had reason to believe, however, that this return overstated the tonnage of ironclads built in the last five years. I accordingly moved for a return which would give in detail the names of the ships and their tonnage built or partially built since April, 1874; at the same time I constructed a table in this form from materials provided in successive estimates. The result is that for the five years 1869-73 there were built 56,211 tons of armoured vessels, or at the rate of 11,240 tons per annum, and for the six years 1874-79 there were built in the dockyards and by contract out of the ordinary votes only 42,867 tons, or an average of 7,124 tons, or less than two-thirds of the average of the previous five years.

The table also shows, as Mr. Reed recently pointed out in the House of Commons, that no single ironclad vessel has been commenced and completed in the dockyards in the six years; that the 'Inflexible,' which was commenced in 1873, is still incomplete, and that the 'Ajax' and 'Agamemnon,' commenced in 1877, are still little more than half complete.

In addition to the vessels built or bought out of the ordinary votes there are the four ironclads bought out of the vote of credit, with a tonnage of 18,430. Even with this addition, the average for the last six years has been only 10,000 tons, as compared with an average of 11,200 tons for the previous five years; apart from these purchases, the building in the dockyards has been most dilatory and insufficient for the maintenance of the fleet in comparison with those of France and other countries.

When I add that the money spent in the dockyards during the last six years has been at the rate, as nearly as possible, of one million a year in excess of the average of the previous period, making an aggregate of nearly six millions; that to this must be added another 1½ million representing the advantage due to the greatly reduced price of shipbuilding materials, coals, which I estimate at 10 per cent.; and that another million and a half were spent out of the vote of credit, I think it will be universally admitted that the result is most unsatisfactory. For the aggregate excess of nine millions, as compared with the previous five years, we might have built, at least, 18 ironclads of the size and cost of the 'Devastation,' or we might have built a fleet of unarmoured vessels more numerous than all we have now afloat. What has become of the money is a

Mr. Shaw-
Lefevre.

question which naturally arises. A very small part of it has been spent in repairing ironclads. I ventured, in the discussion on the Navy Estimates in 1879, to give numerous instances of wasteful expenditure—of vessels being repaired for more than their value; of vessels, such as the troopship ‘Orontes,’ lengthened at a cost of 141,000*l.*, considerably more than the cost price of a new vessel; of the inordinate price given for the ‘Independencia,’ and the immense sums spent on subsequent alterations, bringing her cost to nearly double the cost of the ‘Devastation.’ No answer was even attempted by Mr. Smith to these charges.

I am your faithful servant,

G. SHAW-LEFEVRE.

Reading, March 27.

Armour-plated Ships built or commenced in Her Majesty's Dockyards since April 1874.

	Tons weight	Tons weight built before 1874	Tons weight built since 1874	Remaining to be built April 1, 1880
Alexandra	6,100	1,456	4,644	—
Téméraire	5,535	354	5,180	—
Thunderer	5,950	5,201	749	—
Dreadnought	7,350	3,275	4,075	—
Shannon	3,370	326	3,044	—
Inflexible	7,300	79	6,518	803
Ajax	5,901	—	3,390	2,519
Agamemnon	5,901	—	3,362	2,539
Colossus	6,150	—	762	5,318
Conqueror	4,108	—	730	3,468
Majestic	6,150	—	710	5,440
Polyphemus	1,615	—	703	912
		10,691	33,867	20,091

Armour-plated Ships built by Contract since April 1, 1874.

	Tons weight
Nelson	4,500
Northampton	4,500
Total	9,000

Armour-plated Ships bought out of the Vote of Credit in 1878.

	Tons weight
Superb	5,950
Neptune	6,080
Belleisle	3,200
Orion	3,200
Total	18,430

OBSERVATIONS OF THE *TIMES*, MARCH 28, 1880, ON
THE ADMINISTRATION OF THE NAVY.

It is curious that while Mr. Bright has been denouncing warlike expenditure as no better than throwing money to the bottom of the sea, it has been made a complaint against the Government by Lord Hartington that they have not maintained the Army and Navy in due efficiency. It is one of the last charges which would be expected to be brought against a Conservative Administration, but it is one which, when advanced on responsible authority, must always command attention from the public. The Navy, in particular, is the peculiar pride of the British people; and perhaps this is one reason why controversy respecting its efficiency is perpetually raging. The disputes of successive First Lords or Chief Constructors resemble the quarrels of architects. Each in turn maintains that the constructions and designs of his predecessors or successors were of the most imperfect character, and denounces the result of their work as comparatively valueless. Soon after the present Ministry had taken office, the late Mr. Ward Hunt, then First Lord of the Admiralty, startled the House and the country by declaring that we had little more than a phantom fleet; and though by subsequent explanations he relieved the alarm thus created, his criticism remained as a general charge against the naval administration of the preceding Government. Now, it appears, the tables are to be turned, and the Liberal leaders are advancing a precisely similar accusation against the present administration of the Admiralty, and are making it a strong point in their case against the Government. The charge as first brought forward by Lord Hartington was recently answered by Mr. Smith, in one of his speeches to the electors of Westminster; and to this reply two rejoinders are made this morning—one in a speech by Mr. Childers at Pontefract, the other in a letter from Mr. Shaw-Lefevre, which will be found in our columns. It is, we fear, impossible to come to a definite conclusion on the dispute from the materials thus supplied. But they raise a question of very great

Alleged
deficiency
of construc-
tion, 1874-
1880.

Times. interest to the country, and one which demands thorough discussion in the new Parliament.

Shipbuilding and maintenance alternately predominate in the programmes of successive Administrations.

Mr. Smith's reply to the original charge against him involved two statements. The first was a re-assertion of Mr. Ward Hunt's description of the state of the Navy as inherited from his predecessor; the second was an allegation that its efficiency has been vastly increased under the present Government. 'The fact was,' he said, 'that in 1870 the Liberal Government inherited, through the exertions of the late Mr. Corry, a very fine fleet; but in 1874 the fleet had fallen into a very decrepit condition.' In contrast with this result of Liberal administration, he read a return, for which he had just called upon the permanent officials of the Admiralty, upon whose faith it rested. According to this return, on the 1st of April, 1874, of ironclad ships fit to go into action there were 101,044 tons; these ships were moved by 74,908 indicated horse-power, and they had guns which at one discharge could throw 37,000 lbs. of metal. At the present time, against the 101,044 tons of ironclads thus prepared for action there are 272,000 tons; the available horse-power has been increased from 74,000 to 195,000; and as against the 37,000 lbs. weight of metal there can now be discharged 111,000 lbs. 'That was to say, our ships are two and a half times more numerous and their weight of metal is three times as heavy as it was then.' He added that 'this was the result of spending more money, for he admitted that during the last six years they had spent more money than their predecessors.' At the same time he does not accuse Mr. Ward Hunt's predecessor of indifference to the state of the Navy, but describes him as 'the victim of circumstances.' 'Mr. Goschen was as anxious as he was to maintain the fleet in a state of efficiency, but he found that the whole thought of the Admiralty had been directed to building ships, and they had allowed the engines and boilers to become useless and ineffective. They might as well have at the railway stations a fine lot of engines ranged alongside, and not one of them able to move.' These are formidable figures, and the explanation offered of them is very simple and intelligible. What is Mr. Shaw-Lefevre's reply? A great part of his letter may, we think, be disregarded as irrelevant to the issue. He takes great pains to show that the Government have been backward as compared with their predecessors in building new ironclads. But, whatever dispute there may be in respect to the details of the work executed, this allegation appears to be in substance admitted. Mr. Smith's very complaint of the late Administration is that they spent too much money on construction and too little on repairs. The same may be

said of Mr. Childers's speech. He practically admits the justice of Mr. Smith's description of the policy of the Government in which he was First Lord. He found, he said, that his predecessor, Mr. Corry, had decided quietly 'to cut down the estimates, and to build at that time no more ironclads.' In other words, Mr. Corry had determined to devote his chief attention to rendering our existing ships more efficient. Mr. Childers at once determined to reverse this policy. 'It seemed to me,' he says, 'much more important to be ahead in building new ships with the last improvements than to patch up old ones.' This was steadily done by himself and by Mr. Goschen who succeeded him. 'We built rather more, in fact, than our programme, and we spent much less in patching.' Here, it will be seen, are two definite policies placed in contrast, and fully acknowledged by their authors. Mr. Goschen clearly summed up this part of the question in the late debate on the Navy Estimates. 'There were,' he said, 'two distinct policies which a First Lord could adopt—one the repairing, the other the building of ships. Now, the right honourable gentleman had adopted the former, and the result was the complaint as to the paucity of the ships he was building. . . . The late Government pursued a different policy. They concentrated a great deal of their attention on building, and were in consequence abused for not having repaired sufficiently.' This being admitted to be the state of the case as between the two Governments, the public will be much inclined to come to the conclusion that one has about as much to say for itself as the other, and that, in all probability, each of the two policies is as good in its time and place, provided it be not carried too far. If our Constitutional system provides us with alternate administrations at the Admiralty, of which the one builds ships and the other periodically brings them up to a proper state of efficiency, we shall not, after all, be so very badly off. At all events, the difference between these two systems is at each period a question of policy which must be dependent on circumstances, and a mere change from the one to the other does not of itself constitute a valid charge against the efficiency of an Administration.

But the question raised by Mr. Smith was of a different character. Either policy, as we have said, may be carried too far; and his statement is that, whereas the late Government had allowed the Navy to become 'decrepit' from want of repairs, he has more than doubled its efficiency by attending to them. Mr. Shaw-Lefevre's answer to this part of his adversary's case amounts to a simple denial of the trustworthiness of the return from which he quotes. The comparison, he urges, depends upon the opinions formed re-

Times. specting a vast number of individual vessels in various conditions; and it is impossible to place reliance on 'a return of an argumentative character, drawn up for the purpose of a political speech, which gives every latitude for placing ships on one or other side of an arbitrary line which divides those which are or were fit to go into action from those which are not fit.' Mr. Childers's reply is of the same nature, but to some extent admits the technical accuracy of Mr. Smith's statement. He defends his policy by urging that some of our most powerful ships would only be required when war broke out, and 'a few weeks' work would then be wanted to complete them.' Some of the old ironclads would not be wanted at the beginning of a war, 'and they too might be left to be put in thorough condition later on.' Mr. Smith's return, according to him, is made up by leaving out of account, under cover of the words 'fit to go into action,' all the ironclads which needed 'but a few weeks' to render them fit for service. It is evident that any number of ambiguities may be concealed under either of these two rival statements. On the one hand, it may be a matter of somewhat arbitrary opinion whether a ship is 'fit to go into action;' on the other, very different opinions may be formed as to the value of a Navy in which there are several ironclads which need 'a few weeks' to render them fit for work. The question depends on the precise meaning of the terms employed; and in the absence of further explanation it is difficult for the public to form any opinion on the merits of the controversy. At the same time, it must be observed that Mr. Smith's figures exhibit a contrast which can hardly be explained away by the deduction of two or three vessels more or less from the rival catalogues. He describes our present ships as two and a half times more numerous, and their weight of metal three times as heavy. If this be at all near the truth, the additional money which Mr. Shaw-Lefevre accuses him of having wasted, and which he admits having spent, is very well accounted for. The dispute, as we have said, will need very careful discussion when Parliament meets. Meanwhile, it would seem that the country may draw some reassurance from the dispute. The Liberals are quite satisfied with the state of the Navy when they left office; and the Conservatives claim, without being altogether contradicted, to have at least maintained its full efficiency. Between the two, and their mutual criticisms and rivalries, it is probable that we have never really had a phantom fleet, and that at the present moment, at all events, it is quite equal to any demands which are likely to be made upon it.

SIR E. J. REED.

To the Editor of the 'Times.'

SIR,—I am not satisfied with the manner in which the discussion upon the above subject has been left in your columns, and, as the question is one which justly causes no little anxiety throughout the country, I shall be glad of an opportunity of throwing further light upon it. In the last naval debate in the House of Commons I took some pains to show that the progress of ironclad shipbuilding had been extraordinarily dilatory under the present Administration, and that the programme for the future operations of the Royal Dockyards was to the last degree unsatisfactory, and even absurd. Upon this demonstration other adverse statements were based, and under the provocation thus given Mr. W. H. Smith offered a reply at Exeter Hall on March 25, in which he asserted (from a return which no one outside the Admiralty has seen) that the ironclad ships now in a state of readiness for sea are from two to three times as numerous and as strong as they were in 1874. Now, so far as the figures given go, they ought undoubtedly to be welcome to all lovers of the country, and that they have some substantial value and significance I most readily admit. But, at the same time, it is my duty to point out that such figures cover the most dangerous assumptions, and, if accepted as a true test of naval strength, would lead the Navy to ruin. The very standards adopted—viz., tonnage, steam-power, and weight of broadside—are utterly false tests of strength and fighting efficiency; while the lumping together of the oldest and most effete vessels with the most modern is a process of which a child would scarcely be capable in a serious discussion. That tonnage is no true standard will be obvious to all, from the fact that the old 'Warrior,' with her 4½-inch armour over a small portion of her, figures in Mr. Smith's estimate as of 6,109 tons (B.M.); while the 'Dreadnought,' with her 14-inch armour, appears there as of 5,030 tons, although the 'Dreadnought' is probably the most powerful finished ironclad in the world, while the 'Warrior' has

Times,
April 17,
1880.
Criticism
on Mr.
Smith's
return on
the state of
the Navy
in 1880.

Sir E. J.
Reed.

long ceased to be regarded as an ironclad at all, or, at least, is considered to be one of the weakest we possess. As regards the standard of steam-power, the same sort of contrast exists, the very earliest and most useless standing on a level with the latest and most powerful ships. As regards the third standard, weight of shot and shell thrown, every one knows that, although ten shells of 100 lbs. weight each would be perfectly useless in a naval attack upon other ironclads, they would weigh as much as one shell of 1,000 lbs. weight, which alone might destroy any one of the early ironclads. Mr. Smith's standards are, therefore, utterly fallacious, and the country may well feel alarmed when its Navy is committed to men who know no better than to employ such tests of naval strength.

Next allow me to set forth in some detail the process by which Mr. Smith has built up his Exeter Hall figures. There are first the five ships of his predecessors, which have been finished in the Royal Dockyards, and of which one (the 'Thunderer') was nearly complete when the present Government took office. These are:—'Alexandra,' 'Téméraire,' 'Thunderer,' 'Dreadnought,' and 'Shannon;' tonnage, 28,680; indicated horse-power, 32,100. Next there are the four vessels of the 'Hydra' class, to which Mr. Shaw-Lefevre made reference in the *Times* of Saturday last. One of the four—the 'Gorgon'—was completed and commissioned by the last Government; and the other three were so very nearly complete that that Government, and not the present, ought to be credited with them. These give:—'Cyclops,' 'Hecate,' and 'Hydra;' tonnage 8,190, indicated horse-power 5,000. We must add to these the only two ironclads produced out and out (by contract) by the present Government—viz., 'Nelson' and 'Northampton;' tonnage, 9,000; indicated horse-power, 12,000; and likewise the ships purchased out of the extraordinary War Vote of Credit—tonnage, 18,200; indicated horse-power, 24,230. These are, I believe, the total results of the ironclad shipbuilding operations of the Government during their six years of power, and may be brought together thus:—

	Tonnage	Ind. H. P.
ships begun and advanced by their predecessors	28,680	32,100
'Hydra' class	8,190	5,000
ships built by contract	9,000	12,000
ships purchased with Vote of Credit	18,200	24,230
	<u>64,070</u>	<u>73,330</u>

Here we have 64,000 out of the 170,000 tons, and 73,000 out of the 120,000 indicated horse-power, which Mr. Smith claims to have added to the efficient ironclad Navy of the country since 1874.

It is obvious that, roughly speaking, about one-half of the quantity is due to work executed by his predecessors; and that in the case of vessels of the 'Hydra' class, and of the 'Thunderer' and 'Dreadnought,' advantage has been taken, in swelling the figures, of the mere accident of a few ships being just short of completion when the Government was changed in 1874. There are none of the ironclads commenced by the Government in this state at the present moment.

Sir E. J
Reed.

Any impartial person inspecting the above figures must clearly see that when the results of the labours of their predecessors and of the War Vote of Credit are taken away the Government production of new ironclad ships has been most unsatisfactory, and if similar negligence were persisted in the pre-eminence of our Navy would soon be gone.

But what they have been unable to perform in fact by ship-building they have succeeded in appearing to accomplish by ship-repairing, and Mr. Smith's quantities of efficient tonnage and horse-power have been inflated to large proportions by counting in a crowd of ironclads of the old type which have undergone repair or refit. That they have been rightly and wisely repaired and refitted I readily admit, and I praise them for having done the work; but I blame them, and I blame them with whatever severity I can command, for availing themselves of this fact for the purpose of inspiring the public with an amount of confidence in themselves and in the present state of the Navy which would be entirely fatal if indulged in. Out of the many ironclad ships repaired (about a dozen) there are but three ('Hercules,' 'Audacious,' and 'Lord Warden') which were not laid down before my appointment to the Admiralty as long ago as 1863. All the others ('Warrior,' 'Black Prince,' 'Achilles,' 'Minotaur,' 'Agincourt,' 'Northumberland,' 'Hector,' 'Prince Albert,' 'Wivern') are of the oldest type, with armour which is no longer considered worthy to be called armour, and devoid of most of the qualities of a modern ironclad. And yet they swell the aggregate of Mr. Smith's figures by 50,000 tons and by nearly 50,000 indicated horse-power.

It appears needless to pursue the inquiry further. That the First Lord and the Government deserve the credit of preventing even old and comparatively worthless ironclads from falling in large numbers out of repair cannot be doubted; but they deserve, in my opinion, the severest censure for neglecting to push forward the ships of modern type, and for squandering six whole years and an excessive dockyard expenditure without having added a single iron-

Building
neglected
in order to
push on
repairs.

Sir E. J.
Reed.

clad ship of their own initiation to the Royal Navy in the Royal Dockyards, or having even brought any approximately to completion.

There will now be a change of Government, and with it there must be a great change in the dockyard programme for the coming year. Whoever may undertake to administer the Navy, if I should to-morrow obtain a seat in Parliament I shall feel it my duty to urge upon the House of Commons a very considerable modification of the present shipbuilding proposals of the Government.

I should have been delighted to have seen Mr. Smith retire from his high office with perfect credit; as it is, he retires with much credit I willingly admit, but nevertheless under conditions which make his removal from office give new hope for the greatness and power of our naval service.

I have the honour to be, Sir,

Your obedient servant,

E. J. REED.

Royal Hotel, Cardiff: April 5.

MR. BRASSEY.

To the Editor of the 'Times.'

SIR,—Having watched the administration of the Navy during the last fifteen years with close attention, I venture to offer a few observations on the controversy between the First Lord of the Admiralty, Sir Spencer Robinson, and Mr. Shaw-Lefevre, on the subject of shipbuilding in our dockyards.

It must be admitted by every impartial observer that the reductions in the number of workmen in the dockyards were carried too far in the earlier years of Mr. Gladstone's Administration. But the responsibility for those reductions belongs at least as much to Mr. Corry and to Sir Spencer Robinson as to the able administrators who filled the office of First Lord of the Admiralty in the late Cabinet. The reductions proposed to Parliament by Mr. Childers were based on a report prepared in 1870 by Sir Spencer Robinson, as Controller of the Navy, for the guidance of the Board, of which he himself was a member. The report opens with a review of the dockyard expenditure during the four preceding years. It gives the number of men employed in the dockyards and the expenditure on wages from year to year. In the estimates for 1866-67, prepared by the Duke of Somerset's administration, provision is made for 18,618 artificers, and for an expenditure in wages of 1,065,194*l*. No appreciable change was made in these figures in the estimates for the following year, for which Sir John Pakington was responsible. In 1868-69 there was much discussion at the Admiralty in reference to the estimates, and the late Mr. Corry, who had originally contemplated a large addition to the shipbuilding work, both in the dockyards and by contract, finally proposed a reduction of 3,049 artificers in the Government establishments. The number borne in the previous year having been for some time in excess of the number voted, no less than 4,000 men were discharged, and arrangements were made for closing Deptford yard. No reduction under succeeding administrations was so sweeping as that enforced under

Number of
workmen
in dock-
yards in
1866-1870.

Mr.
Brassey.

the Admiralty of 1868. Where great fluctuations occur from year to year in the amount of work carried out in the dockyards, economy is impossible. The sudden change of policy adopted by Mr. Corry offered a bad precedent to succeeding administrations.

Numbers
provided
for in
1870-71.

In the estimates for 1869-70, as revised by Mr. Childers, the number of artificers and labourers to be employed in the dockyards was reduced by 1,130; but the total tonnage to be built fell short of the amount for the previous year by 986 tons only, and the ironclad construction was actually raised from 7,538 to 8,866 tons. The construction of new ships was prosecuted, nevertheless, with unabated activity by diminishing the strength of our foreign squadrons, and thus lessening the demands on the dockyards for repairs and reliefs.

The estimates for 1870-71 were framed in accordance with the rigorous principles of retrenchment to which Mr. Gladstone's Administration were pledged, and the pruning-knife was applied almost exclusively to dockyard expenditure. The number of workmen was fixed at 11,276, being a reduction of 2,866 as compared with the previous year. Mr. Childers belonged to a Cabinet determined on a vigorous effort to keep down expenditure; but the economies for which he is responsible were made with the entire concurrence of his professional adviser. Sir Spencer Robinson had stated, in the report already quoted, in reviewing the shipbuilding operations in the dockyards in 1869-70, that 'the very great care exercised in undertaking repairs, and the steady discouragement given to expending money on obsolete ships, showed that a larger provision had been made under the head of repairs and maintenance than was strictly necessary. Hence the administration was able in 1870 to propose a considerable reduction in the number of artificers for the ensuing year. . . . To keep pace with the wants both of ironclads and of wooden ships an addition of about 19,000 or 20,000 tons per annum is fairly necessary. Of this, about 15,500 tons, equally divided between armoured and unarmoured ships, might be built in our dockyards. I believe that 11,000 artificers and 625,000*l.* in wages would build the above amount annually and maintain what it is really necessary to maintain.'

Sir Spencer Robinson was clearly under the impression that the previous expenditure on repairs had been extravagant. While assenting to an aggregate reduction of not less than 2,866 men, he had at the same time contemplated a new distribution of the dockyard labour, allotting only 4,927 men to repairs, and increasing the number employed in shipbuilding by 450. The extent to which the reduction in the cost of maintenance was proposed to be carried

under the new arrangements may be readily understood from a comparison of the numbers appropriated to this branch of dockyard work in 1869-70 with the corresponding numbers in previous years. The figures are as follows :—1869-70, for repairs, 8,243 men ; 1868-69, for repairs, 9,833 men ; 1867-68, for repairs, 8,296 men ; 1866-67, for repairs, 11,936 men.

The policy of retrenchment in the expenditure on repairs, combined with an increase in the construction of new tonnage, as proposed by Sir Spencer Robinson, was resolutely adopted by Mr. Childers ; and, notwithstanding the great diminution in the number of men employed, he succeeded, in 1870-71, in completing 9,567 tons weight of ironclad construction in the dockyards.

It cannot be denied that these results were attained by a restriction of the appropriation for repairs which has not been warranted by increased experience in the wear and tear of an ironclad fleet. Iron hulls, when properly cared for, possess great durability ; but boilers deteriorate rapidly, and considerable sums are constantly being expended, in alterations in the rig, the armament, and the fighting equipment.

The first note of alarm was sounded by Sir Spencer Robinson himself, in a paper dated August 4, 1870, only seven months after he had expressed his approval of great economies in the expenditure on repairs. Reviewing the condition of the Navy, and the state of preparation for contingencies which might possibly arise out of the Franco-German war, he reports that, of 39 ironclads in the hands of the Navy only twenty-two were available for general service, and that six special ships were similarly available for special service. He considered that the provision in the dockyards was insufficient for secure neutrality, and that any delay in making further preparation was fraught with danger to the country.

Sir Spencer Robinson's Memorandum of August, 1870.

No time was lost by Mr. Childers in giving effect to the urgent recommendations of his responsible professional adviser, and, a vote of two millions having been taken for additional armaments, a sum of half a million was applied by a Board minute of August 9 to the completion of the repairs of ironclads, expediting the 'Thunderer' and the 'Dreadnought,' and the payment of the first instalments on the four armoured vessels of the 'Cyclops' class. In the estimates for the following year, provision was made for 12,850 men, being an addition of 1,574 to the numbers voted in the previous year, which had been cordially accepted by Sir Spencer Robinson as sufficient for the wants of the Navy. In the interval, however, he had been brought face to face with the stern possibility of a European

Mr. Brassey.

Mr.
Brassey.

war, and his views as to the requirements of the Navy had been so completely changed by the altered circumstances that he thought it his duty, in a confidential paper of January 13, 1871, to make a formal representation to Sir Sydney Dacres that 13,500 artificers was the lowest number which would suffice, and that, even with that very considerable augmentation, the necessary work would be stinted and starved. In the paper in question, he expressed his conviction that Mr. Childers, whose health had given way from overwork in the public service, would have approved the proposed addition to the strength of the dockyards. No difficulty, however, was experienced with Mr. Goschen. In the first estimate prepared under his supervision, the number of workmen was raised to the standard which Sir Spencer Robinson had insisted upon, and in the following year a further addition was made of 1,380 men to the strength of the dockyards.

Action
taken by
Mr. Gos-
chen.

The increase in dockyard expenditure, which it had been found impossible to prevent even under the effective control of Mr. Childers and Mr. Goschen, was continued for the first two years after the accession of the present Administration to power. It reached its culminating point in 1875-76, when the vote for wages amounted to 1,025,477*l.*, being an increase of 394,074*l.* as compared with the year 1870-71. No material reduction has been made in the interval, and the increased expenditure has been mainly devoted to the repair and maintenance of the fleet. In 1875-76 the armoured construction was only 10,641 tons, as compared with 9,567 tons in 1870-71, and the unarmoured construction fell away from 3,942 to 3,516 tons.

It is impossible to conclude this review of recent dockyard administration without acknowledging the efforts of the eminent public servants who have followed one another at the Admiralty to protect the interests of the taxpayers; but when it is attempted to make political capital out of the alleged neglect of a Liberal Ministry to maintain the fleet in a condition for active service, it is the duty of impartial and attentive spectators to remind the public that the reductions in the dockyards were due, not to a desire to stint the Navy, but to inexperience in the wear and tear of ironclad ships. The policy of Mr. Childers was not merely approved, but suggested by Sir Spencer Robinson. In the early years of the Liberal administration the appropriations for the maintenance of the fleet were inadequate; but the subsequent increase in the aggregate expenditure, almost the whole of which has been absorbed in repairs, must have been watched with the deepest concern by all who desire

that the power and efficiency of the Navy should grow in proportion to its cost.

Mr.
Brassey.

Between 1874 and 1879 thirteen ironclads, with a total displacement of 101,252 tons, were launched from the English dockyards. In the same interval the French launched 65,775, and the Germans 36,577 tons of armoured ships. The list of armoured ships in construction in the French dockyards, as given in the last issue of the *Année Maritime*, included five first-class and seven second-class ships, and six first-class and two second-class coast-defence vessels. In the German dockyards three armoured ships of the 'Sachsen' type, of 7,400 tons, and eight armoured gunboats of the 'Wespe' type, of 1,000 tons, are in various stages of progress. Ironclad ships are now being built in the German and the French dockyards at least as rapidly as we are building for our own Navy, and from a naval point of view it is perhaps satisfactory to be assured that the formidable fleets now building for the most ambitious naval Powers on the Continent are not likely to be combined against us.

Armoured
construc-
tion in
England,
Germany,
and
France.

The annexed table is taken from the Navy Estimates and from a return of tonnage built, which was obtained by Mr. Shaw-Lefevre.

Dockyards.

Year	Artificers	Wages	Total weight of hull already built	
			Ironclads	Unarmoured
		£	Tons	Tons
1870-71	11,276	631,403	9,567	3,942
1871-72	12,850	706,538	6,261	7,167
1872-73	12,858	712,571	5,789	6,632
1873-74	13,500	841,658	5,003	6,817
1874-75	15,120	967,214	7,916	3,388
1875-76	16,000	1,025,477	10,341	3,516
1876-77	16,109	1,015,947	7,920	5,517
1877-78	16,109	1,014,829	5,940	6,112
1878-79	17,565	1,015,102	6,912	4,817
			To be built	
1879-80	16,111	1,012,038	7,493	4,658

I am, Sir,

Your obedient servant.

THOMAS BRASSEY.

April 5, 1880.

OBSERVATIONS OF THE *TIMES* ON THE PRECEDING
LETTERS.

The *Times*.
Policy of
Mr. Ward
Hunt and
Mr. W. H.
Smith.

AMID the electoral turmoil of the last ten days it is possible that a discussion on the state of the Navy, which has been carried on both in election speeches and in letters published in our columns, has attracted less attention than it deserves. All parties are ostensibly agreed that questions concerning the national defences, more especially those which turn on the condition and efficiency of the Navy, are not to be used as mere weapons of party warfare. Somehow or other it always seems to happen, in spite of this salutary understanding, that when either party succeeds the other in office it discovers that its predecessor has been mismanaging the Navy, and has left it in a lamentable state of inefficiency. When the present Government came into office in 1874, Mr. Ward Hunt, who was then First Lord of the Admiralty, created no little alarm, in moving the Navy Estimates, by declaring that he would not be satisfied with a phantom fleet and dummy ships. The natural inference was that this was all that his predecessors at the Admiralty had left him. But the public alarm was soon allayed when it was found that Mr. Ward Hunt was prepared to accept his predecessor's estimates with very slight modifications, and that a few hundreds of thousands were all that he needed to restore the Navy to what he considered a state of efficiency. Latterly the charge has been retorted. Again we are told that the state of the Navy is unsatisfactory, and that the present Government has mismanaged it, although it has spent a good deal more money than its predecessors. In six years it has built no ironclads of its own in the dockyards, and has not even completed some that were already begun when it took office. To this Mr. Smith replies that the policy of the Government has been to repair ships as they needed it rather than to build new ones rapidly, and that the expenditure sanctioned by Parliament will not suffice for both purposes at once. This defence was practi-

cally endorsed by Mr. Goschen in the debate on the Navy Estimates in the last session of Parliament. But Mr. Smith has what, at any rate, appears to be an even more complete defence than this to offer. In a speech delivered a fortnight ago, he revived the forgotten scare of his immediate predecessor, and again accused the former Government of allowing the fleet to 'fall into a very decrepit condition.' Now, however, he tells us, such has been the energy of the present Board of Admiralty, that as compared with 1874 'our ships are two and a half times more numerous and their weight of metal is three times as heavy as it was then.'

So far it would seem as if Mr. Smith had the best of the argument. But his speech only served to renew the controversy. Besides his speech and that of Mr. Childers in reply to it, we have printed letters from Mr. Shaw-Lefevre and Mr. Reed, from Mr. Smith himself, from Sir Spencer Robinson, and from Mr. Thomas Brassey—that is to say, from the present and a former First Lord of the Admiralty, from a late Secretary to the Admiralty, from a former Controller of the Navy, from a former Chief Constructor, and from an independent critic of naval affairs whose opinion is justly respected. It certainly ought to be possible to draw some definite conclusion from this conflict of officials and experts. We will not perplex our readers with all the details of a long and intricate discussion; but we are disposed to think that they will not be very far wrong in coming to the conclusion that each party is keenly alive to the necessity of maintaining the Navy in a high state of efficiency, though, as a matter of fact, each has pursued the same end by the adoption of different means. To go back to 1868, Mr. Corry decided in that year to reduce the estimates, and to build no more ironclads for the present. Mr. Childers, who succeeded Mr. Corry, decided to reverse this policy, though he endeavoured still to keep down expenditure by a re-organisation of dockyard administration. His efforts in this direction were to some extent frustrated by the outbreak of the Franco-German war, and by the practical failure of some of the proposed measures of reform. Mr. Goschen continued the policy of Mr. Childers in building new ships, and during his administration the dockyard expenditure was gradually increased by the necessity of employing a much larger number of artificers in order to complete the work annually provided for in the estimates. When the present Government came into office in 1874, Mr. Ward Hunt reverted to the policy, formerly pursued by Mr. Corry, of repairing existing ships in preference to building new ones, and the same policy has likewise been pursued in the main by the present First Lord of the

Times.

Shipbuilding under Mr. Corry, Mr. Childers, and Mr. Goschen.

Attention directed alternately to building and repairs.

Times. Admiralty. Now, it is clear that if this is in substance a true account of the matter, the public has, so far, little reason to complain of the policy of either party. Each is admittedly necessary in turn, while both cannot be pursued together. It is quite another question whether the policy of Mr. Childers and Mr. Goschen was as efficient as it should have been, or whether that of Mr. Ward Hunt and Mr. Smith has not been more extravagant than it need be—in other words, whether Mr. Goschen left ‘dummy ships’ and a ‘decrepit fleet,’ and whether Mr. Smith has been ‘patching up old ships’ at an excessive cost and presenting a fallacious appearance of strength by placing obsolete ironclads in a line with the latest specimens of naval construction, or accrediting ten shells of 100 lbs. with the same offensive and destructive power as a single shell of 1,000 lbs., as Mr. Reed accuses him of doing. With the acknowledged policy of either party there does not seem to be much fault to be found; but fair criticism of its execution in detail is not only permissible but highly advantageous to the public service. Perhaps, however, for criticism of this latter kind Parliament is the more appropriate place; there only can mis-statements be at once corrected and misunderstandings promptly removed. A running controversy overloaded with statement and counter-statement, with returns alleged to be fallacious, and with comparisons declared to be misleading, is apt to bewilder the public, and to divert its attention from the main question at issue, which is whether the Navy has been successfully maintained by each party in such a state of efficiency as to enable it to deal with all such emergencies as it is reasonable and prudent to take into account. If one party is to be accused of leaving a decrepit fleet and the other of patching up useless ships and of squandering money on repairs, and if each can successfully rebut the charge, it is difficult for plain men to believe that party spirit has been entirely excluded from a discussion which certainly ought to be free from it.

Satisfac-
tory view
of the state
of the
Navy.

There is nothing more easy in this country than to get up a ‘scare’ about the Navy. It is the sort of thing that periodically recurs whenever a change of Government is imminent, or has lately taken place. Perhaps this is inevitable when each party has identified itself with a policy which is the necessary complement of that of the other; but it is none the less to be regretted. There is no point on which the nation at large is more sensitive than that of the condition of its Navy, and yet there is none on which, owing to the recriminations of technical critics, it is more difficult for outsiders to form an accurate and decisive opinion. After all, we

cannot but place some trust in the responsible Ministers of either party. What the nation wants is a Navy sufficient for all practical purposes, and it would certainly wish to believe that this is the primary care of each successive Administration. The choice of the best means for securing that end it is very willing to leave to those who are responsible for it. Naval science is so technical, naval warfare is so entirely changed in all its conditions, that it is practically impossible for the public to judge of many of the questions at issue regarding them. It is very apt to be frightened by the assumption that England's naval supremacy is virtually at an end because some nation has a ship with thicker plates and bigger guns than any of ours, or because the fleets of several nations combined can be proved on paper to be capable of overpowering all the ships that we could array against them. A new gun is found capable of piercing the thickest plate, and in a few weeks a thicker plate is rolled, which in its turn defies the gun. Thus the battle rages from year to year, and we are subject to periodical panics, as though the fighting power of a fleet could be accurately measured by size of gun and weight of armour alone. It seems to us that the true policy of naval administration is to take science for its servant, and not for its master; to keep steadily abreast of all that science can do and all that mechanical skill can accomplish, to fit the fleet for its duties in time of peace, and to take a reasonable estimate of the possible and probable contingencies of war. It is a significant fact that England builds ships of war for all nations, and that all nations come to England to study the best methods of naval administration. The explanation is that we are acknowledged to know more about the matter than others, and to turn our knowledge to at least as good an account. This is the true secret of our naval supremacy, and so long as we have confidence in ourselves and exercise a reasonable foresight we need entertain no serious fear of losing it.

SIR SPENCER ROBINSON.

To the Editor of the 'Times.'

SIR,—I certainly do not regret having published an article in the *Nineteenth Century* on England as a Naval Power, though it has brought no little trouble on me in my endeavours to prevent a party use being made of the facts I there stated. I can only rejoice at finding the condition of the Navy occupying the attention of such distinguished men as Mr. Gladstone, Mr. Childers, Mr. Smith, Mr. Shaw-Lefevre, Mr. Reed, and Mr. Brassey—a condition which, on very different grounds, they all consider more or less unsatisfactory. I cannot doubt that the attention thus called to it will lead to the insecure position of our country—intimately depending for its existence on its naval power—being exchanged for one of just and reasonable security. The question ought certainly not to be treated from a party, still less from a personal, point of view. But as, from a mistaken knowledge of the relative positions and power of the First Lord of the Admiralty and the Controller of the Navy, Mr. Brassey blames Mr. Corry and myself for reductions effected in the Navy Estimates, I must remind him that the First Lord of the Admiralty is only one of a council, subordinate himself to the Prime Minister, and from my own knowledge I can state that his decisions as to the expenditure necessary for the Navy are, or were, frequently overruled. The First Lord is, or used to be, told, and he repeated it to the Controller of the Navy, ‘You can only have so much money for the *matériel* of the Navy; do the best you can with it.’ My own experience was that careful consideration of how the money allowed by the Government could be most beneficially applied always took place between the First Lord and the Controller of the Navy. The latter, though a trusted and influential subordinate, was the servant of the Government; and if he carried his remonstrances too far he was liable to the rebuke, ‘that some one must govern the country, and it is not the place of the Controller of the Navy to do so.’

The estimates for 1870–71 presented a large reduction on those

Naval expenditure determined by Prime Minister.

of previous years, principally in the votes referring to the *matériel*. These reductions are much censured by Mr. Brassey. They were, as I have just described, initiated by the Government. Belonging to a reforming Administration, painfully conscious as I was that, notwithstanding strenuous efforts, there was a large amount of waste and mismanagement under our former dockyard system, I proposed the very large reductions in dockyard expenditure, coupled with a thorough reform already begun in our dockyard establishments, the cardinal point being the substitution of management and direct responsibility in these establishments for superintendence. I worked zealously and cordially under my immediate chief to effect all the reductions rendered necessary by the Government's decision. I believed that, under certain conditions, in which Mr. Childers entirely agreed, the number of men proposed (11,256) could perform the amount of work which was necessary for our then wants. I had been able to report in the early part of 1870 that every ironclad, exclusive of those just launched, with one exception (the 'Lord Clyde,' under repair), was either in commission or ready for sea; that we had built in the dockyards upwards of 8,500 tons (builder's measurement) of ironclads during the preceding twelve months; that the programme of wooden shipbuilding had been substantially complied with; and that the reliefs for foreign service had been easily met out of the reserves.

Sir Spencer Robinson. Reduction in dockyards, 1870-71.

I have great doubts whether a similar and as satisfactory statement could have been made in many subsequent years. The measure of reduction I proposed was to a great extent experimental. Its success depended on many conditions, which could not be positively secured, such as the maintenance of peace, a different arrangement of the force to be employed on foreign stations, an absolute refusal to make capricious or unnecessary alterations in ships already built, as well as to repair useless and obsolete ships, the cordial co-operation of all concerned in and out of the Admiralty, the completion of very extensive reforms, the exercise of forethought, method, and thrift not always to be relied on in subordinates; so that, when all these things are duly weighed, I have since come to the conclusion that, although, perhaps, justified in taking the part I did, it would have been more prudent to have made those reductions less extensive, and to have assumed rather the part of the unwilling than that of the willing horse in these transactions. Peace came to an end in the very midst of our reforms and while reductions were still in progress; some of the other conditions on which I had based my convictions of success also failed me; and in consequence I at once used all the influence I

Reasons for increase demanded in 1870.

r Spencer
Robinson.

possessed to obtain such an increase in our naval force, and, consequently, in our naval expenditure, as appeared to me under the altered conditions of the world to be necessary. I did not succeed either in obtaining an adequate temporary increase in our dockyards for the current year or anything like what I considered was required for naval *matériel* in the following year, early in which I ceased to be Controller of the Navy. I think Mr. Brassey is mistaken in supposing that there was no difficulty made by Mr. Goschen, who succeeded Mr. Childers as First Lord, in granting that addition to the workmen in the dockyards which I had urged in 1871-72; the number of workmen was, notwithstanding my protest (referred to by Mr. Brassey, and communicated by me to Mr. Goschen after I had left office), maintained at 12,850 men, and it was not till 1873-74 (two years afterwards) that the number he proposed reached 13,500, which I had considered necessary in 1871-72. Admitting, for the sake of argument, that I was entirely responsible for the reduction in 1870-71, and that it was an error to have proposed it, that error was not fully carried out. It lasted from March to the middle of July. It was then remedied as far as I could possibly do so myself or persuade others to do. It seems a little unreasonable to assert, under these circumstances, 'that every impartial observer must admit that the reductions in the number of workmen in the dockyards was carried too far in the earlier years of Mr. Gladstone's Administration, and that the responsibility for these reductions belongs at least as much to Mr. Corry and Sir Spencer Robinson as to the able administrators who filled the office of First Lord of the Admiralty in the late Cabinet.'

I have given some of the reasons why I cannot concur in this opinion, and why I believe it to be unjust to Mr. Corry as well as to myself. There are other points in Mr. Brassey's interesting letter to which I might take objection, but I have trespassed very much indeed on your space, and thanking you for having allowed me to do so,

I remain, Sir, your obedient servant,

ROBERT SPENCER ROBINSON.

61 Eaton Place, S.W.

ADDRESSES, LETTERS, AND PAPERS.

SECTION IX.

*ON THE GENERAL POLICY OF THE
ADMINISTRATION,*

AS EXHIBITED IN THE NAVY ESTIMATES, 1881-1883.

DISCUSSION IN THE HOUSE OF COMMONS ON THE NAVY ESTIMATES FOR 1881.

Mr.
Brassey.
House of
Commons,
March
1881.
Repairs.

MR. T. BRASSEY said his hon. friend, Mr. Trevelyan, had drawn in outline a sketch of the policy which the Government were now proposing, and he only ventured to interpose in order to supply a few additional details. The Government had no reason to complain of the tone in which the estimates had been discussed. The right hon. gentleman, the late First Lord of the Admiralty (Mr. W. H. Smith), had referred to the diminished expenditure in regard to repairs by contract. There could be no doubt that it might be desirable in an emergency to call in the assistance of contractors, but such a step must necessarily be expensive, the labour employed by contractors being much more highly paid than labour in the dockyard. The right hon. gentleman had also expressed his regret that more vessels were not included in the programme for repairs. He (Mr. Brassey) wished it was possible to keep every ship at all times in a perfect state of repair. At the present time, however, they were well prepared to meet any exigency which might arise. There would be completed, and ready to send to sea in the present year, no less than ten ironclads, one frigate, 24 corvettes, 15 sloops, 19 gun-vessels, two paddle-boats, and one surveying vessel.

Overtime.

The right hon. gentleman had objected to the plan of working overtime. The Admiralty were following the advice of those high officers in the Navy who had had the greatest experience in these matters, and it was only proposed to resort to overtime to a very limited extent. Machines were used in the construction and repair of ships, which it was sometimes advantageous to keep in motion for a longer time than the ordinary dockyard hours.

New arma-
ments.
'Shah.'

The hon. Member for Cardiff, Sir Edward Reed, had spoken with satisfaction of the change that was about to be made in the armament of the 'Shah.' It was a matter for congratulation that the Admiralty were enabled, by the great improvements that

were taking place in modern gunnery, to give to those large and noble ships a more effective armament.

With regard to the engineer officers in the Navy, the immense importance of their duties was fully appreciated at the Admiralty. Our ships were most complex structures. They were armed with guns worked by hydraulic gear, and engines were used for all the important work. It was obvious, therefore, that the engineers had acquired a position of immense importance, and he could assure hon. members who had spoken on the subject that there was no disposition on the part of the present Board of Admiralty to deny what was just to the engineers. Constant efforts had been made to improve their position in late years. The question of cabin accommodation had been alluded to by his hon. and gallant friend opposite. As a sea officer, the hon. Member must have known that it was a subject of great difficulty. The late Government had instituted an improved system of training for the engineers, and the result must be to advance materially the position of those officers. While anxious to improve the position of the engineers, it was the duty of those who were responsible for the administration of the naval service to take care that the number of those officers did not exceed the strict requirements of the service. There had been a great increase in the number of engine-room artificers, and their claims to an improved position were constantly pressed upon the Admiralty. It was by a combination between the engineer officer in command, and the artificer under his orders, that the duties of the engine-room could best be conducted.

Engineers
of the
Navy.

In dealing with the numerous demands which had been made on them, the Board had adopted it as a ruling principle that it was inexpedient for a Government, as soon as it acceded to office, to make considerable changes in the scale of pay and pensions. The artificers employed in the dockyards should not be encouraged to look for some improvement of pay as soon as a change took place in the Government of the country. Such an idea would interfere most seriously with the spirit of loyalty which ought to animate the service.

Pay and
pensions.

The hon. Member for Cardiff had criticised, as it was natural he should, the shipbuilding policy of the Admiralty. He did not deprecate that criticism; on the contrary, he was thankful for it, and he considered that his hon. friend was doing a public duty in criticising the Admiralty, even with severity. He should not enter on a controversy on professional matters; but, so far as he could supply information on the points raised, he should endeavour to do so. The Secretary to the Admiralty had drawn attention to the unprecedented

Criticisms
of Sir E. J.
Reed on
design for
'Warspite,'
and 'Im-
périeuse.'

speed of sixteen knots an hour which it was proposed to give to the armoured cruisers designed under the instructions of the present Board, and to the four 'Leanders' projected under the late Board. No demonstration could be needed to show the great importance of strengthening the British Navy with vessels of great speed.

It might be objected that the armoured cruiser was too costly. This assertion might be tested by a comparison with the 'Northampton,' which had the same displacement, and cost 325,000*l.* In the new cruiser we must add 19,000*l.* for the greater engine-power, 20,000*l.* for the steel-faced armour, and 10,000*l.* for the substitution of copper for zinc sheathing. These additions brought up the total to 424,000*l.*, and the actual estimate for the cruiser was 427,000*l.* In point of fact the cost of the hull was the same, and the differences were represented by the armour and the increase practically of three knots in speed. The comparison might be made in another way. The cost of the hull for the 'Nelson' was 278,000*l.* To this should be added 20,000*l.* for the steel-faced armour, and 10,000*l.* for the copper sheathing of the new cruiser. These amounts brought up the total to a sum of 308,000*l.* The difference between this amount and the sum of 375,000*l.*, the actual estimate for the hull, was fully represented by the torpedo fittings and the increased cost of labour upon the harder material.

The limited protection had been criticised. The French constructors were unsurpassed in skill and science, and yet in attempting to combine complete protection along the water-line with the necessary condition of speed they had been compelled to make many sacrifices in other points of scarcely inferior importance.

If we looked from the French to other navies we should find no practical example to encourage the hope that complete protection, both for the guns and their crews, and for the buoyancy and stability of the ships could be obtained by any other means than by adopting extraordinary proportions of breadth to length. The Italians had failed to do this in their first large ships, the 'Duilio' and the 'Dandolo,' which were protected with side-armour amidships only, and in which the protection of the water-line was given up for about two-thirds of the ship in favour of the system of a cellular raft on a watertight armoured deck. In the still larger vessels of the 'Italia' type they had boldly given up the attempt to protect buoyancy and stability in a ship in which it was considered essential to obtain a high rate of speed. Side-armour had been entirely suppressed, the raft body and armoured under-water deck being substituted.

In Germany the latest ships which had been built were the four

corvettes of the 'Sachsen' type. These were vessels of 7,400 tons displacement, with a speed of fourteen knots, being two knots less than that of our cruisers, with a difference of only 600 tons in displacement. The armament of these ships consisted of six 26-c/m. or 18-ton guns, as against the four 18-ton and six 6-inch guns with which our protected cruisers would be armed. In the 'Sachsen' class all the guns were mounted *en barbette*, and were therefore as much exposed as in our armoured cruiser. The citadel was protected with 10-inch armour. The extremities, both before and abaft the citadel, had no vertical armour, reliance being placed, as in our own ships, on a horizontal armoured deck. In the 'General Admiral,' the latest example of the armoured cruiser in the Russian Navy, the protection was limited to a belt from four feet above to four feet below the water-line.

'Sachsen' type.

In the Austrian 'Tegethoff' the armour-belt terminated, 32 feet from the stem, in a transverse bulkhead, the forward compartment being filled with cork. This feature was commended by Sir Edward Reed in his paper describing the 'Tegethoff,' read at the Institution of Naval Architects. Where armour extended round the bow, and was carried down at the stem to considerably below the ram point, the bow would be protected from much local damage in ramming iron vessels. Where the ram was a subordinate feature, as in the 'Tegethoff,' it might be unnecessary to burden the bow with so much protection.

'Tegethoff.'

The value of length as an element of speed might be shown by innumerable examples. Many were quoted in the list of converted ships referred to in Sir Edward Reed's work on ironclads. The most recent constructions afford some remarkable cases in point. The 'Colossus,' 'Majestic,' and 'Collingwood' had an extreme breadth of 68 feet, as compared with 66 feet in the 'Ajax' and 'Agamemnon,' but their length had been extended from 280 feet—as in the 'Ajax'—to 325 feet. With these more favourable proportions of length and breadth an additional speed of one knot had been obtained without increasing the indicated horse-power. In preparing the design for the armoured cruisers, proposed in the present estimates, a similar question arose. To obtain the required speed of sixteen knots with a length of 300 feet, 8,800 indicated horse-power would have been necessary. With a length extended to 315 feet, 8,000 indicated horse-power is sufficient. The first cost would be the same in either case, but the longer ship would be able to realise her greatest speed with much less coal consumption.

Reasons for adopting fine lines in ships intended for service as cruisers.

For ships designed to keep the sea, to chase for considerable dis-

tances at high speeds, and to maintain that speed perhaps against a long and deep head sea, the advantages of length were of paramount importance. The growing tendency towards ships of great proportionate length, which we saw in the mercantile marine, showed clearly the conclusion drawn by shipowners from their practical experiences. The problem which was presented to them was altogether different from that with which we had to deal in designing ships for battle ; but the armoured cruiser was intended to give chase to privateers very similar in proportion to the Atlantic liners, and considerations of coal endurance compel us to approximate to forms which had been found to yield the most favourable results in the attainment of high speed with the lowest consumption of coal. It was not in the smooth waters of the measured mile, but in the deep swell of the open ocean, that the advantages of the long bow and easy entrance would be most conspicuous.

General
merit of
design.

In the armoured cruiser they believed they were making a notable stride in naval architecture. The ship was designed to protect our commerce, and to be a terror to slower and less formidable vessels. Viewed in this aspect, the speed of sixteen knots, the elevated and powerful armament, distributed *en barbette*, instead of being concentrated in two turrets or a confined battery, the important addition of six light armour-piercing guns under cover on the main-deck, the breechloading armament, and the admirable accommodation for the crew when at sea, presented a combination of features in some respects entirely new, which should commend to the hearty approval of the Committee the design they had the privilege to propose.

Manning of
the Navy.

With reference to the manning of the Navy, he might be able to give a few figures which would complete the statement made by his hon. friend. The total number proposed for the service for the ensuing year was 35,200, as against 35,700 last year, and 35,150 for the two preceding years. The number of seamen now proposed would equal the average number provided in the four years from 1875 to 1879. While the number of seamen remained stationary the number of the non-seamen class showed a marked increase. The number was 11,731 at the present time, and in the steam Navy there was a constant tendency to increase. Taking the seamen and the non-seamen class together, there was an aggregate increase from 29,125 in 1875 to 30,988 as proposed in the present estimates. In 1880-81 the total number was 31,433.

Ships in
commission.

He quite admitted what his right hon. and gallant friend opposite (Sir John Hay) had said with regard to the accumulation of seamen in the home ports, but he must remind the Committee that the accu-

mulation was not due to a reduction in the number of ships in commission. On May 1 the total complement of the ships in commission was 33,755, against 33,649 on February 1, which was practically the same figure.

He looked upon the training of the Navy with the deepest interest. The system of training was, he believed, in its initial stages, perfect; but there was reason to regret the considerable delay in passing boys into sea-going ships. The Admiralty were doing their best to reduce the period of detention in the harbour. The Flying Squadron afforded the best means of training boys for the Navy, and the Admiralty had sent a powerful fleet on an extended voyage, under the command of Lord Clanwilliam. The estimates now proposed included a long list of ships well adapted for cruising under sail.

Training of
seamen.

With regard to the Royal Naval Reserve, to which his right hon. friend had referred, an increasing number of prime seamen were coming forward to enrol themselves in the Reserve. He had received a few days ago a report of a meeting at Liverpool, at which a number of shipowners were present, all of whom concurred in the opinion that a distinct change and improvement had taken place in the character of our merchant seamen. He hoped the advance already made in the numbers and efficiency of the Naval Reserve would continue, and that, should there be any necessity for increasing the strength of the Reserve, they would find no difficulty in doing so.

Royal
Naval
Reserve.

Sir JOHN HAY: What is the character of the 5,496 men in the second class of the Reserve?

Mr. T. BRASSEY said that the second class of the Reserve was most satisfactory, although it was not pretended that the qualification of these men was the same as the men of the first-class Reserve.

There were one or two collateral points to which, in justice to the Navy, he wished to refer. In the recent gales the services of the Coastguard in saving life were conspicuous. During the last five years many hundreds of lives had been saved by the gallant exertions of the Coastguard.

A general survey brought into view many services beyond the ordinary range of duty which are rendered by the Navy to humanity and civilisation. In a most interesting memorandum the Hydrographer had sketched in outline the extensive and useful labours of the last year. Our surveyors had been at work in the English and the Bristol Channels, and their sphere of operations had embraced Newfoundland and Queensland, the West Indies, Fiji, the islands of the West Pacific, China, and Japan. The Sea of Marmora had been

Surveys in
progress.

admirably charted, and the examinations now being made in the channels leading from the Straits of Magellan to the Gulf of Peñas gave promise of very useful results, in enabling ships to double the continent of South America in sheltered channels, and thus avoid the high seas experienced in going round Cape Horn.

In conclusion he desired to say that it had been the guiding principle of the present Board to avoid organic changes, and to do their best to improve and perfect the machinery they found in operation. They had thought that economy and efficiency would be best maintained by preserving the continuity of naval administration. They knew that the best thoughts of a long succession of able sea-officers and civilians had been given to the improvement of the Navy. They had undertaken their task in a spirit of reverence for the great traditions of that noble service, and they hoped that they might be as successful as their predecessors in maintaining a good Navy for their country.

MEMORANDUM ON THE POLICY OF THE ADMINISTRATION, AS EXHIBITED IN THE NAVY ESTIMATES FOR 1881-82.

IN considering the shipbuilding programme for 1881-82, the large increase in the construction of armoured tonnage is the first point which will attract attention.

Turning from the amount of tonnage to be constructed to the question of type, two prominent features will be noticed. The first is the high speed which will be attained in the two armoured cruisers and the four unarmoured cruisers of the 'Leander' type. Each of those ships is intended to attain a measured-mile speed of at least sixteen knots. In proposing so considerable an addition to the Navy in swift cruisers, we were making a serious effort to strengthen ourselves where we had hitherto compared unfavourably with foreign Powers.

Speed of
'Leander'
class.

Extraordinary efforts have recently been made to increase the strength of the Russian Navy in vessels of a very moderate displacement, and not powerfully armed, but with a speed considerably exceeding that of our own corvettes of the same tonnage. With the French we compare favourably in cruisers of over fourteen knots speed. In cruisers of thirteen-knots speed we have a great advantage, but in the intermediate class, capable of steaming fourteen knots, we had only three ships to twenty-two in the French Navy. In armament, in their speed of sixteen knots, in the protection of vital parts by internal armour, bulkheads, and numerous compartments, our unarmoured ships of the 'Leander' class may challenge comparison with vessels of similar displacement in any foreign Navy.

Our programme was remarkable, not only for the speed of the six ships to which I have referred, but also for the extended use of the system of mounting guns *en barbette*. This system appeared in 1880, for the first time, in the 'Collingwood.' It was proposed in 1881 for the two armoured cruisers. The comparative value of the

Barbettes
and turrets
compared.

barbette and the enclosed turret is a question which can never be settled definitively without the experience of actual warfare. To some it may appear that the crews of the guns mounted *en barbette* will be unduly exposed to the destructive effects of the fire from machine guns. The French constructors consider that the crew will obtain shelter from vertical fire under the flying-decks which they erect over all their open towers, while they are protected from horizontal fire by the guns and the armoured parapets of the barbette turrets. The barbette system offers advantages in the facilities for bringing the gun to bear on an enemy in rapid movement, while the reduction in the weight of the tower admits of three heavy guns being mounted for two in enclosed turrets. These are very valuable features in sea-keeping cruisers with a high freeboard, and not intended to fight at close quarters in the line of battle. Various plans for the protection of the gunners in the barbettes from the fire of machine-guns are under consideration.

Our guns would probably have been mounted long ago in barbettes but for our reluctance to abandon the muzzle-loading system. Long muzzle-loading guns cannot be worked in barbettes. Long breech-loading guns can be. The French, having adopted the breech-loader, were able to take advantage of the consequent economy of weights.

Numbers of
seamen.

Turning from the *matériel* to the *personnel*, the numbers which Parliament was asked to vote, in the estimates for 1881-82, for the fleet-services afloat were 35,200, as compared with 35,700, and 35,150 for the two preceding financial years. The numbers taken in the estimates for 1881-82 were the numbers actually serving on November 1, 1880. The reduction, as compared with the figures shown in the estimates for 1880-81, was due to the loss of life in the 'Atalanta,' and the falling off in the supply of boys to the training-ships, and, as a consequence, in the number of boys and ordinary seamen serving in the fleet.

The number of flag-officers and retainues was increased by the appointment of an additional Admiral to the command of the Flying Squadron. In the ranks of the commissioned officers there was a slight reduction in the numbers of sub-lieutenants, navigating sub-lieutenants, assistant paymasters, and engineers.

In making up the Vote I., it was proposed for the year 1881-82 to provide for 19,108 seamen, as compared with 19,833 in 1880-81, 20,207 in 1879, and 19,172 in 1878. If the comparison be carried back to former years, it will be found that in 1870 the number of seamen was 18,344. That number was maintained, with

no material variation, until 1875, when a sudden increase of 300 men is observable. The increase in numbers in 1879 calls for some explanation. It was made, as it were, by a stroke of the pen. In 1877, an Admiralty order had been issued that sailmakers and sailmakers' crews, and ropemakers, should be rated as seaman-class men. The order took effect in 1879, and the numbers thus added to the seaman-class may be estimated at 400. In the same order it was directed that masters-at-arms and ship's corporals, about 460 in number, should be removed from the seaman-class, but a long delay occurred in carrying into effect this part of the order. The addition to the seaman-class, and the marked decrease in the waste, from 2,601 in 1877-78, to 2,308 in 1878-79, account for 700 out of the total increase of 1,000 men between 1878 and 1879. The number of seamen proposed for the financial year 1881-82 was equal to the average numbers for 1875, '76, '77, '78. It exceeded by 400 the numbers of the seaman-class in 1874, and by 750 the numbers in 1873.

While the aggregate numbers were not only maintained, but even showed considerable additions, as compared with former years, our force of seamen had been increased, in relation to our requirements for the manning of the Navy, in a far larger sense than a mere comparison of numbers would indicate. Mastless ironclads, with a complement of 350 men, one-third of whom are seamen, are taking the place of masted vessels in the line of battle. In view of the altered conditions, we should anticipate, as we actually find, that the numbers in excess of complements have largely increased. The excess was 4,761 on December 1, 1871, 4,788 on the same date in 1873, and 6,416 in 1880. The permanent supernumeraries in the home ports, consisting mainly of seamen qualifying for gunnery in the 'Excellent' and 'Cambridge,' and men borne in the 'Indus,' 'Asia,' and 'Pembroke,' for ships in reserve, were 1,213 in 1873, as against 1,564 in 1880. The disposable supernumeraries in the home ports increased from 2,529 in 1873 to 3,189 in 1880, the supernumeraries abroad from 1,046 to 1,663 in the same period. The rapid augmentation in the number of the disposable seaman-class men is due mainly to the increased proportion which the artificers and engine-room complements bear to the total strength of a ship's company. We had in 1881 11,647 of the non-seaman class, as against 11,208 on May 1, and the numbers show a constant tendency to increase. The steady accumulation of seamen in the home ports is not due to any reduction by the present Board in the number of ships in commission. The total complements in Her Majesty's ships in commission were 33,768 on May 1.

Reduced complement of seamen in mastless ironclads.

Increase in supernumerary and disposable men.

1881. They were 33,649 on February 1. In the numbers in the several ratings no appreciable change has occurred. The petty officers and leading seamen were 5,921 on May 1, 1881, and 5,859 in February. The number of able seamen showed a slight increase, from 8,470 to 8,513.

Reserves of
seamen.

In reviewing our resources generally for manning the Navy, we may fairly look to the Reserves, no less than to the number of men actually borne for fleet service. The Coastguard on shore has been maintained for many years at an average strength of 4,000 men. The Naval Reserves have averaged, since 1868, 15,785 men. The number at the present time is 17,256, and while this increase has taken place in the numbers, the reports which have been laid before Parliament from the distinguished officers who have inspected the force—including Sir Harry Keppel, and Admirals Elliot, Tarleton, and Phillimore—have been increasingly satisfactory as to the physique, the discipline, the gun-drill, and the general efficiency in all the other exercises in which the Naval Reserves are instructed.

Training of
seamen.

The training of our seamen is a subject closely allied with the manning of the Navy. In its initial stages seamanship is taught on a perfect system. The preliminary training in harbour should be followed up by transferring the boys, as they leave the training ships, with the least possible delay to sea-going ships. In many instances the boys are detained too long in the ports. The evils which must inevitably ensue were forcibly described by Commodore Wilson, in valuable papers on training, read at the United Service Institution, after the completion of his term of service as superintendent of the training ships. The majority of the lads must inevitably deteriorate, and the love of adventure, which attracted them to sea, is discouraged in the suspended animation of the receiving ships or the ironclads of the First Reserve.

It is a delusion to suppose that a liberal expenditure in pay, victuals, and clothing is sufficient to turn landmen into seamen. Hitherto naval opinion has been unanimous that a sailing ship without auxiliary power is the school in which seamanship can be most effectually studied. In conformity with this view, the 'Eurydice' and 'Atalanta' were successively fitted out. The melancholy disasters which befell them have been carefully investigated by two committees, and it is not necessary to enter now upon these painful topics. No ships of the same class are now to be found in the Navy, and none will be constructed in the future. While our experiences in the case of the 'Eurydice' and the 'Atalanta' have been so strangely sad, we have had a third training ship for many

years, of which the ablest officers in the Navy have spoken in terms of the highest praise. The 'Cruiser,' a sloop from which the boilers had been removed, was sent out to the Mediterranean when the late Sir Hastings Yelverton was in command. I have been assured by his then flag-captain, Admiral Brandreth, that the 'Cruiser' was found most valuable. Every batch of officers and seamen sent out for temporary service in this vessel showed a sensible improvement in seamanship. I have reason to believe that the system has been not less warmly approved by Sir Geoffrey Hornby and Sir Beauchamp Seymour. If additional vessels were employed in the same service, we should know that we were carrying out a plan that had been long tried and had yielded excellent results, and which would be under the constant supervision of the able officers who are always to be found in command in the Mediterranean. We should have the advantage of a suitable climate, less inclement in the winter than our own, free from the destructive and irresistible hurricanes which occasionally rage in the Atlantic, but quite boisterous enough at times to give experience to seamen.

The question of multiplying vessels of the 'Cruiser' class as training ships must be considered side by side with the demands, always more or less urgent, for the maintenance, if not the increase, of our foreign squadrons. Should it be found practicable to withdraw two or three gunboats from the foreign stations, and to commission an equal number of training ships in the Mediterranean, we should effect a substantial saving, and we should certainly add to the opportunities afforded to officers and men of acquiring a knowledge of seamanship.

While the supplementary methods of instruction were receiving careful consideration, the best and most practical training was being given to a large body of officers and men in the Flying Squadron, under the command of Lord Clanwilliam, and the estimates for 1881-82 included a long list of ships to be brought forward for commission, of a class particularly adapted for instruction in seamanship.

In considering the general question of our naval expenditure, it is necessary, in justice to those to whom its administration has been entrusted, to look back over a series of years, and to compare the fluctuations in that expenditure with the growth in the value of the trade, for the protection of which our Navy is maintained. In the year 1858-59 the effective expenditure for the Navy was 7,106,000*l.*, the non-effective 1,334,000*l.* In 1870-71 the effective expenditure was 7,308,000*l.*, while the non-effective had increased to 1,705,000*l.* The estimates for the ensuing year provide for an effective expen-

Naval expenditure in relation to trade.

diture of 8,434,000*l.*, while the non-effective expenditure amounts to 2,063,000*l.* If we compare the expenditure on the Army in the same interval, we find that the effective expenditure has grown from 9,337,000*l.* to 12,797,000*l.*, with an increase of half-a-million in the non-effective expenditure.

The increase in the foreign trade and tonnage of our merchant navy has been out of all proportion with the increase in our naval expenditure. The total tonnage of British merchant ships was 5,711,000 tons in 1860, 7,149,000 in 1870, and 8,462,000 according to the last returns. Reckoning the carrying power of steamships as fourfold that of sailing ships, we have half the mercantile tonnage of the globe.

Germany, with a mercantile tonnage of 1,129,000, spends 890,000*l.* on the maintenance and construction of her fleet. France, with 976,000 tons of merchant shipping, expends 2,893,000*l.* on building and repairs, and employs 26,000 workmen in her dockyards. England, with an excess of tonnage over the French mercantile marine of seven million tons, employs only 16,000 men in her dockyards, at an expenditure, under Votes 6 and 10, of 3,323,000*l.* With these figures before us, it cannot be said that England is leading the way in an aggressive policy, or in the direction of extravagance.

Fleet in
commission.

The more extended commercial relations of the United Kingdom involve a corresponding increase of responsibility upon the Navy for the maintenance of the police of the seas. The tonnage of our ships in commission is 255,000, as against 171,000 tons in the French Navy. The maintenance of the ships in commission involves a proportionate deduction from the sum available for the construction of new ships. It was stated in an article published last year in the *Norddeutsche Allgemeine Zeitung*, that the entire force of the German Navy on foreign stations consisted of 16 ships, 130 guns, and 3,411 men; a considerably smaller force than we maintain on the China Station alone. From an Admiralty point of view, it would certainly be desirable to make a considerable reduction in the number of small gun-vessels in commission on foreign stations. Gun-vessels are ill-adapted for cruising in war, or for instruction in seamanship in time of peace. They are too slow to give chase to privateers, and too vulnerable for coast warfare. As a preparation for war, our expenditure would be applied to advantage in building powerful ironclads, or cruisers of the 'Leander' class, rather than in the construction and repair of gunboats, which are of no great service, except for the police of the seas, and which, in proportion

to the complement they carry, are very costly to maintain. It is in compliance with the demands of the Foreign Office, and exclusively for commercial and peaceful purposes, and not by the desire of the Admiralty, and as a preparation for war, that we maintain small gun-vessels in such considerable numbers in our squadrons abroad. This should be taken into consideration by those who might otherwise be disposed to regard the whole cost of the Navy as expenditure on a war service.

In introducing estimates which involve additional expenditure, it will be expected on the part of a Liberal Government that evidence will be afforded that strict attention has been given to economy. It is satisfactory to be able to give an assurance that we are gradually introducing reforms which must substantially reduce the cost of maintenance of the fleet.

The expense accounts of the Navy, showing the cost in labour and materials of every service performed in the dockyards, are now presented with a promptitude which in former years was deemed to be impracticable. When I first entered Parliament, these accounts were two or three years in arrear. The expense accounts for the last financial year were before us in the middle of February. Extravagance will be checked, when it is known that every transaction will be brought to notice before it is too late to call those who are responsible to account. The Accountant-General, acting in his capacity of auditor on behalf of the Admiralty and the public, has, during the last two years, introduced some useful criticisms, in the form of a preface to the expense accounts. He has this year directed especial attention to the large expenditure upon repairs. The number of men employed in repairs, and the corresponding consumption of materials, have long been a black spot in our naval administration, and it will be gratifying to know that some real progress has been made in diverting the resources of the dockyards from maintenance to construction.

Expense
accounts.

Costly repairs, both to the hulls and the machinery of Her Majesty's ships, have been rendered necessary by the premature deterioration of boilers. The boiler endurance of the Navy has compared unfavourably with that of the merchant service. We have seen boilers condemned in five years, which ought to have lasted ten years. The attention of the late Board of Admiralty was directed to this question, and they appointed two Committees, the one on the pay and training of the engineers, the other to investigate the causes of the decay of the boilers. An improved system of training for our engineers has now been established, and directions as to the best

New regu-
lations for
manage-
ment of
boilers.

methods of treating boilers under all conditions of climate have been given in the new edition of the *Steam Manual*. The diligent observance of these revised instructions will secure a fair endurance in the boilers of Her Majesty's ships.

The present Board have carried forward the work of their predecessors. The inspections of ships by the flag officer in command have hitherto been confined mainly to matters connected with discipline, seamanship, gunnery, and the general good order of the vessels examined. The engines and boilers, being a comparatively recent innovation, have not received the same amount of attention. It has now been directed that the chief engineers of flag-ships shall periodically inspect all the boilers in the squadron, and report their condition to the Admiralty. The new order will make it impossible for an incompetent engineer to allow the boilers under his charge to deteriorate through a long commission without attracting observation.

Superior
durability
of iron and
composite
ships.

The substitution of iron for wood as the material chiefly used in the construction of ships, will prove another effectual means of economising expenditure. The universal experience of the private shipowners has shown the superior economy of iron as compared with wood-built ships. Composite ships share, to a large extent, in the advantages of iron, in regard to durability and facility for repair. Every ship lately added to the Navy is of iron, steel, or composite construction. It may be that in the annual cost of maintenance an iron ship offers no advantages as compared with a wooden ship, but where the iron ship is maintained in thoroughly good order there is practically no structural or local deterioration, and therefore the expense of renewals must be considerably diminished in a Navy of iron-built ships.

Alterations have been another fertile source of dockyard expenditure, and they have tended to swell the apparent cost of maintaining the Navy. It must, however, be observed that where an alteration is made with the view of substituting an improved armament, or to meet the changes which the progress of invention is continually introducing in naval warfare, such an alteration cannot fairly be classified as an expenditure for mere maintenance and repair. In any case the expenditure is of a character which comes under the direct control of the Parliamentary authorities, who must be consulted, and must give their direct approval before any extensive alterations are undertaken.

Committee
on inciden-
tal charges.

There is yet another step to be mentioned, tending to economy, which has been taken by the present Board. At the instance of Mr.

Shaw-Lefevre, a Departmental Committee was appointed to examine the whole question of the growth of incidental expenditure in the dockyards. After careful inquiry, they have made proposals to the Board, which will have the effect of enabling the accountants in the several dockyards, who are the local representatives of the Accountant-General as the auditor of the Navy, to check more closely the appropriation of the expenditure on labour and materials to the different ships and services. It will be their duty to keep the superintendents informed, by means of weekly returns, of the expenditure on all the services which are being carried out in the dockyards. By comparing the actual with the estimated cost, the superintendents will have an effectual means of detecting cases of extravagance, and it will be their duty to demand explanations from the responsible heads of the professional staff.

Passing from repairs to the construction of new ships, there is less room for extravagant and unchecked expenditure, and, as a matter of fact, the dockyards, with all the inevitable disadvantages of Government administration, have competed on fairly equal terms with the private contractors as to cost, while the work executed is generally believed in the Navy to be somewhat superior in character.

Piece-work.

Her Majesty's ships would cost less if they were built by piece-work; but insuperable difficulties exist in the introduction of piece-work in the great establishments of Devonport, Portsmouth, and Sheerness, and, to a certain extent, at Chatham. The three yards first named are called upon to undertake all the repairs of the Navy. The demands are of necessity fitful and uncertain, depending upon political exigencies which it is impossible to foresee. In these yards, if contracts were let to large gangs of men, for any of the important operations which are carried on in private yards by sub-contract, the men so employed could not be taken from their work at a moment's notice to fit up a transport or repair an ironclad. Thus the main purpose for which the yards are maintained would be frustrated.

At Pembroke the conditions are more favourable; and at that yard, by the good management of the superintendents and their professional officers, and by the advantageous terms on which Government can deal with the local labour market, the cost of construction has been brought down to a figure which could scarcely be reduced, if the contract system were substituted for day-work, under the present close supervision.

Good administration, it is hoped, will be promoted by an inquiry which is about to be held, by means of a Departmental Committee,

Committee on yard craft.

into the entire organisation of the Constructor's staff. The Committee on Incidental Expenditure have recommended that a separate inquiry should be made into the cost of the maintenance, and the necessity for the dockyard craft, said to be not less than five or six hundred in number, and varying in size from an old three-decker to a jolly-boat. It is probable that an examination will show that the necessary work can be carried out with fewer vessels and a proportionate economy in repairs.

Non effective vote.

In the expenditure on the *personnel* of the Navy the growth of the non-effective vote has long been increasing, and has become a most serious feature in the naval estimates. In the hope that the present movement may be arrested, and that with the lapse of time some reduction of expense may be effected, a mixed committee of naval officers and civilians has been appointed to inquire into this grave question. We know that all engagements already entered into must be observed. We know that while the servants of the Crown, in whatever capacity, have been partly paid in wages and partly in pensions, we cannot withdraw the pensions without increasing the wages. But, whatever the result may be, it seems impossible to allow the non-effective charge to reach its present magnitude, without satisfying ourselves that no steps are possible to check its future increment.

Economical expenditure on British as compared with foreign navies.

Enough has been said to show that, in proportion to the demands upon its resources, the British Admiralty has a smaller amount at its disposal than any other naval administration, and if we now occupy a position of strength, with which the country may be well content, it is because the Ministers who in succession have presided over the important department of the Admiralty have shown prudence, forethought, and economy, and, still more, because the Navy has behind it a mercantile marine capable of furnishing practically inexhaustible reserves in men, and in the power to build and to repair, which is derived from the commercial industry of the country.

Mr. Cobden on naval strength of British Empire.

When we measure our position with that of other nations it is not the least of the advantages we enjoy that we are guarded by the sea from invasion. As Mr. Cobden so powerfully argued in his pamphlet on the *Three Panics*, our island fortress is the more secure because it is so compact. 'If,' he said, 'we imagine that our Army and Navy were reduced one-half, does any person seriously apprehend that these islands would be in danger of being molested by any European Power? If such there be, let him recollect that the British Empire contains a population of twenty-five millions of free people, compressed within a space of little more than three hundred miles square—pro-

ably a denser crowd of human beings than was ever before found upon a similar area ; and, further, let it be borne in mind that railroads are now in progress for connecting one extremity of England with the other in such a way that not only any required force of men, but the entire munitions of war may be transported in twelve hours from Lancashire or Yorkshire to the coast of Sussex or Kent, thus converting, as it were, the entire island into a fortified position of such wonderful strength that the genius of Vauban or Marlborough could not have conceived anything so formidable. Which is the Power of the Continent that will make a descent upon a people placed in such an attitude ?'



ADDRESSES, LETTERS, AND PAPERS.

SECTION X.

EXTRA-PARLIAMENTARY SPEECHES,
1881.

COLSTON ANNIVERSARY BANQUET.

*Bristol, November 12, 1881.**Reprinted from the 'Times.'*

SIR T. BRASSEY, on rising to return thanks on behalf of the Navy, said:—I have to thank you for the hearty reception you have given to the toast of the Navy. In responding I desire to express my unqualified admiration for our officers and seamen. It is the highest praise that can be given to say that in their spirit of devotion and their efficiency they are worthy of the traditions of their noble service. The confidence in our seamen, which all must feel who have been in close contact with the service, is fully shared by the country; but when we turn from the men to the ships the same confidence is not felt in our position. These doubts are not inspired by the mere spirit of political partisanship. In recent articles, the *Pall Mall Gazette*, a rather sympathetic organ on our side of the question, has been asking in anxious tones for official information. I propose to give you a comparative statement of the expenditure of England and France respectively on armoured construction. It is unnecessary to look to other European countries. In Russia the construction of ironclads has been abandoned; in Germany little is being done; and, owing to the recent incidents in Tunis, we may rest assured that the great ironclads which are slowly approaching completion in Italy will not be engaged in any combined operations likely to be prejudicial to British interests. In the present position of affairs the action of the British naval administration must depend mainly on the policy pursued by the French Government. In ships actually ready for sea our ironclad fleet compares favourably with the French, but in process of time this may cease to be the case should armoured shipbuilding in France be continued with the activity displayed since the close of the Franco-German war. In the interval which has elapsed since 1877 the total armoured tonnage launched has been 29,171 tons for the French, and 21,704 tons for the British

Shipbuilding in England and France.

Navy, and while our Navy Estimates for the present year provide a sum of 750,000*l.* for armoured construction, no less than 1,081,000*l.* has been voted for the French Navy. It is obvious that this disparity cannot long continue. From an English point of view it seems impossible to justify the lavish expenditure of the French, and I would venture to hope that the friendly representations of our Foreign Office would not be without their effect in relieving us from the necessity of imposing additional burdens on the British taxpayer. For ourselves there is not the slightest need for precipitation. We may be calm and confident, because we know our inherent strength. In case of necessity the unlimited resources of our private yards would be utilised in combination with the dockyards. If Parliament voted the money, there would be no practical limit to the shipbuilding capabilities of this country. Setting aside the dockyards, united Europe could do nothing in comparison with our private industrial establishments, if their efforts were concentrated on shipbuilding for war. As a member of the Board of Admiralty, I am naturally anxious for larger appropriations; as a politician, I can look round on a wider horizon, and I see how the Navy of England has gained in the most substantial elements of strength, and that without cost to the British taxpayers. The mercantile marine is the backbone of the Navy, and never had the mercantile marine so many splendid steamships capable of conversion into auxiliaries to the fighting fleet as it has at the present time. Recent political events have been equally reassuring. I have already alluded to the occurrences on the shores of the Mediterranean, and when we look across the broad Atlantic we find a new and most welcome addition to our strength in the cordial relations which now exist between the United States and Great Britain. It is not the policy of the United States to maintain a considerable Navy in time of peace, but they are potentially our most formidable rival on the seas. In former and less happy times an unnatural jealousy divided the two great branches of the Anglo-Saxon race. The apprehension of a rupture with the United States may indeed have been remote, but it was a source of weakness, and we are in a proportionate degree reinforced by the recent manifestations in both countries of the warmest sentiments of mutual amity. The generous homage paid to the British flag at Yorktown and to the star-spangled banner in the centre of our own metropolis are incidents full of happy augury for the future. The United States and Great Britain now stand shoulder to shoulder as they have never stood before, and we number together 100,000,000 people. In the speeches of succeeding speakers the **claims of the**

Extent of
our re-
sources.

Friendly
relations
with the
United
States.

Liberal party will be urged by those who stand high in the counsels of the party. But I may, perhaps, remind you that the generous reparation which was offered to the United States at Geneva was the work of the Liberal party. It was denounced at the time by our political opponents as a national humiliation, but we all accept to-day with deep satisfaction the results which have followed from a policy of justice. Something yet remained to be done which was beyond the scope of politicians and diplomatists. ‘One touch of nature makes the whole world kin,’ and Her Majesty was enabled from her exalted station to express what England felt on the death of General Garfield. Our message of sympathy was conveyed with a true womanly tenderness, which has won the heart of America for the Queen and her people. The friendship between Great Britain and the United States, which has been steadily ripening, and is now, I trust, secured to us for ever, is more to England than a hundred ironclads. Forgive me for this digression, if it is a digression, and let me once more thank you on behalf of our gallant seamen.

THE SHIPWRIGHTS' COMPANY.

December 2, 1881.

Reprinted from the 'Times.'

MR. H. C. ROTHERY proposed 'The Navy, Army, and Reserve Forces,' and jocosely deprecated any omen being drawn from the circumstance that he who had to propose the toast of the Navy was the Wreck Commissioner.

Sir THOMAS BRASSEY, on rising to return thanks for the Navy, said:—Master, my Lord Mayor, and Gentlemen,—Since I have been connected officially with the Admiralty I have often had the privilege of replying to the toast of the Navy. On former occasions I have been glad to use the opportunity of saying, on behalf of our officers and seamen, how well they merit the gratitude and admiration of their fellow-countrymen. As we are met together this evening under the auspices of the Shipwrights' Company, it seems appropriate to refer to the signal services rendered to the country by our naval constructors. The names of the late Mr. Oliver Lang, of Sir Edward Reed, Mr. Barnaby, and his colleagues, Mr. Barnes and Mr. White, will long be remembered in connection with the transformation of our fleet of wooden three-deckers into armoured turret-ships. When we look back to the naval history of our country we see that the ships were seldom worthy of the gallant crews who manned them. The quaint 'caravels' in which Drake, Raleigh, Frobisher, and Hawkins met and vanquished the Armada were poor specimens of naval architecture in comparison with the tall and stately floating castles of the Spaniards. Descending to later times, the ships in which Nelson and his brave companions in arms performed deeds of incomparable valour were dull sailers. The best ships in our fleets were the prizes we had captured. In the present day we no longer look to a foreign source to furnish models and methods of armament for the British Navy. Though we have been slow to protect our ships with armour, we have more than recovered the ground which was lost before the

building of our armoured fleet was undertaken. In the older type of broadside ironclads the 'Alexandra,' now the flagship in the Mediterranean, has no rival, and as battle-ships the high freeboard turret-ships, the 'Dreadnought,' 'Devastation,' and 'Thunderer,' are undoubtedly the most powerful afloat. In connection with the subject of shipbuilding I am glad to have this opportunity of calling attention to the benefits which have resulted, not only to the executive, but to the civil branches of the Navy from the establishment of the Naval College at Greenwich. We now possess facilities such as never existed before for giving to students of naval architecture a high scientific education, in combination with a practical training at the dockyards. It will be satisfactory to the public to know that these advantages are appreciated, and that there is an eager competition, especially on the part of the clever students in the dockyard schools, for the privilege of gaining admission to Greenwich. Before I sit down, and while I am on the subject of construction for the Navy, I should like to pay a cordial tribute of praise to Sir Houston Stewart, who, after a distinguished service of ten years, has within the last few days ceased to be Controller of the Navy. Sir Houston Stewart has witnessed many changes, and directed many improvements. He has done more than this. He has set to every member of that great branch of the service over which he has presided a high example of devotion to the public service. He has thought nothing of himself. His sole aim has been the good of his country, and in all the varied and difficult personal relations of his office he has been courteous, kind, and just. It is by the efforts of men of his stamp that the naval reputation of this country has been created and is worthily sustained. Gentlemen, I thank you for having drunk the health of the Navy.

ANNUAL ADDRESS TO THE ELECTORS OF HASTINGS AND ST. LEONARD'S.

December 9, 1861.

SIR THOMAS BRASSEY said:—In my annual statement you will naturally look for some information on naval affairs. It has been the main object of the present Board to increase the armour construction of the Navy, to supply the fleet with fast cruisers for the protection of commerce, and to introduce a breech-loading armament into our fighting ships. In the estimates submitted to Parliament in the last session, considerable provision was made for carrying out these objects. Eleven thousand tons of ironclads are to be built in the financial year, the corresponding figures for the four preceding years being 7,231, 7,732, 8,430, and 7,653 tons.

*Progress of
armoured
and unarmoured
construction.*

In view of the constant modifications in the methods of naval warfare, and the absolute impossibility of combining in a ship of reasonable dimensions all the qualities required, we are naturally averse to a prodigal expenditure on armoured vessels. The necessity for increased construction for the British Navy has been created by the recent action of the French Naval Administration. It should not, however, be inferred from this remark that we have been led by the spirit of rivalry into a reckless and useless extravagance. Whatever be the ultimate result of the introduction of the torpedo, and the increased power of the gun, large ships must always be required for an ocean-going Navy, and it is certain that we cannot as yet venture to throw off armour from our fighting ships.

While we have made a sensible addition to our armoured construction, we have not neglected the duty of providing the Navy with unarmoured vessels. In our last estimates we proposed to build 8,035 tons, as compared with 8,715 and 9,502 tons in the previous two years.

Having stated the amount of tonnage to be built, I desire especially to direct attention to the speed of our new ships. Since we

Improved
speed in
recent
ships.

came into office we have laid down four armoured ships. Two are of the 'Collingwood' type, designed under the late Administration; their speed will be 15 knots, or one knot more than any armoured ships in the French Navy of the same displacement, and two knots faster than our own 'Ajax' and 'Agamemnon,' both recent ships of the same tonnage. In the two armoured cruisers designed by Mr. Barnaby and Mr. White, under the instructions of the present Board, the speed will be 16 knots. These armoured cruisers will be faster than all the ironclads of foreign Powers, except the far larger and costlier ships now building in Italy. In addition to the armoured cruisers, we have laid down four 16-knot unarmoured cruisers of the 'Leander' type.

'Colling-
wood'
type.

As we are proposing two repetitions of the 'Collingwood,' it may be desirable to describe shortly the distinctive features. The most important change introduced into these vessels is the disposition of the armour. In the central-citadel turret ships it forms the wall of the citadel. In the 'Collingwood' it is taken away from the central citadel, and formed into separate fixed barbette towers. Between the barbettes, and above the upper deck, is a large battery, protected by 1-inch steel plating from the fire of machine guns, and containing 6-inch breech-loading guns, fought at ports 14 feet above water. The guns in the turrets are 22 feet above water. The battery is protected from a raking fire by winged bulkheads plated with 6-inch armour. The crew will be berthed in the upper battery, and will have accommodation infinitely superior to that of any turret ship. The present Board have had under their consideration plans for a more formidable vessel. But they cannot bring themselves to believe that it is prudent to expend a million sterling on a single hull.

General
principles
of design
for ar-
moured
ships.

The constant development of the penetrating power of the gun must tend to lessen the value of armour. What, therefore, are we to do in order to protect our ships? The policy must be something of the nature I will now describe to you. We must separate the part of the ship which is above water from the submerged portion of the hull by a horizontal armoured watertight deck; and a minute cellular sub-division of both sections of the ship, especially of that which is below the water-line, would seem to be the best system of protection from heavy shot and the Whitehead torpedo. If we cannot prevent penetration, we may localise the injuries received. If this be a sound view of the object to which naval architecture for fighting purposes should be directed, armour will be used not so much to protect buoyancy and stability as to furnish a shield for the gunners, the guns, and the delicate machinery employed to work

them. It will be retained to prevent that happening which happened at Sinope, to keep out shell, and the still more destructive bullets from machine guns, and thus to lessen the fearful carnage which would take place on decks crowded with men at quarters.

The unarmoured construction is a far less perplexing problem for the British Navy. We shall always require for the police of the seas vessels capable of cruising both under steam and sail, and for the protection of commerce in war we require ships of high speed, of great coal endurance, armed with numerous long-range guns, and with a full armament of machine guns.

Designs
for un-
armoured
ships.

Turning from the *matériel* to the *personnel*, the estimates of last year were criticised for the reduction in the number of seamen from 19,883 to 19,108. It is, however, to be observed that the numbers of the year 1880-81 were abnormal. The strength of the Navy in seamen for the present year will be equal to the average in numbers in the years 1875, 1876, and 1877. While the number of the seamen has been maintained the number of the non-seaman class, which comprises the engine-room complements and artificers, now so necessary for the efficient manning of our men-of-war, is rapidly increasing. We have now 11,647 of the non-seaman class, as compared with 11,200 in the preceding year. The non-seaman class having been greatly increased, and the number of the seaman class having been maintained, while the complements of seamen in our mastless ironclads have been very largely reduced, a rapid augmentation has necessarily taken place in the supernumeraries available for manning the Navy. In addition to these regular forces we have a splendid reserve of 4,000 men in the Coastguard. Behind the Coastguard we have a Naval Reserve of 18,000 men, the cream and flower of our merchant seamen. During the past year I have visited the drill batteries at Falmouth and Lerwick, and the drill ships at Bristol, Shields, Sunderland, and Liverpool. On all sides I hear a favourable report of the Naval Reserve. They would be an invaluable support to the Navy if they were called upon to serve. The establishment of the Royal Naval Reserve has been of advantage to the Mercantile Marine no less than to the Navy. A month spent every year under the discipline of a man-of-war, and the habits of precision acquired in gun drill, are a most useful training to a merchant seaman.

Personnel
of the
Navy.

Before I pass to other subjects I would call attention to the economy with which the naval administration of this country is conducted. In doing so it is important to notice that a large deduction must be made from our naval estimates for the non

Relation
of naval
expendi-
ture to
commerce.

services. Having no conscription in this country, we have to obtain labour in the open market, and in competition with the private employers. We have, therefore, to pay indirectly in the cost of training, and in pensions, what the working people consider an equivalent to the remuneration obtainable in ordinary industrial occupations. It is the policy of the Admiralty to pay young seamen on a comparatively moderate scale, making large additions as they advance to higher ratings, and giving a handsome pension to seamen who have completed twenty years' continuous service. This system has had the most beneficial effect on the Navy, but it has imposed a heavy charge on the estimates. The non-effective votes for 1881-82 amount to no less than 2,063,000*l.* out of a total of 10,896,000*l.* The rate of increase may be appreciated from the fact that the non-effective votes are half a million more than when I first entered Parliament. Having given this explanation, I will ask you to confine your attention to the effective votes for the Navy.

In looking back over a series of years, it will be found that while an extraordinary growth has taken place in our trade and shipping, the naval estimates have remained practically stationary. The effective votes for 1881-82 were 8,662,000*l.* The exports and imports were 697,000,000*l.*; the steam tonnage under the British flag was 2,723,000 tons. In 1874-75, the last years of the former Liberal Administration, the effective votes amounted to 8,624,000*l.*, with a total foreign trade of 668,000,000*l.* and 1,870,000 tons of steam shipping. Under the Duke of Somerset, who was the First Lord of the Admiralty in the Liberal Administration from 1859 to 1865, the naval estimates were far in excess of the present amounts. In 1863, and again in 1864, 9,300,000*l.* were voted for the Navy. In the following year, being the year of Lord Russell's Administration, the amount was reduced to 8,978,000*l.* At that time the value of our imports and exports was 200,000,000*l.* less than at present, and our steam shipping was less than a third of the present tonnage.

The facts which I have laid before you appear so conclusive as to the strict economy which has been exercised in our naval expenditure, that the question will rather be whether we are doing enough to provide for the security of our vast empire and our extended commerce. Upon this point it is difficult to be precise without entering into invidious comparisons with other Powers. I must, therefore, ask you to be satisfied with a general assurance that we are at the present moment in a satisfactory position.

With reference to the future, I have shown that we are well prepared for manning the Navy, that we have made a marked advance

on the amount of construction carried out under the late Administration, while I have expressed a hope that our future programme will exhibit a further development of our shipbuilding operations without appreciably adding to the public charge. Looking to the enormous resources in the private industry of the country, there is always an advantage in postponing expenditure as long as possible, and thus securing that the latest improvements shall be introduced into our ships.

I must not trespass on your patience by further observations on naval affairs. The temptation is strong to dwell on subjects which excite no party animosity in preference to the difficulties with which Parliament will have to grapple in the ensuing session. The reform of our procedure will be a prominent feature, and any proposal for considerable change must give rise to discussion and provoke resistance. Whatever the proposals of the Government may be, the power of promptly suspending a refractory member will be the most effective means for preventing obstruction. If the House or the Speaker had possessed adequate powers to deal with the misconduct of members, that section of the Irish representation which has acted under the orders of Mr. Parnell would have been long since reduced to silence. Such a result would perhaps have created an additional grievance in Ireland, but it is the only means of enabling Parliament to meet the just demands of England and Scotland.

On the
state of
Ireland.

The condition of Ireland is the paramount anxiety of all concerned in public affairs. Ireland remains to-day what it has been for centuries—the misery of British statesmanship and the weak spot in the British Empire. At different times widely differing policies have been pursued towards Ireland. The system of Cromwell, if it had been relentlessly followed, would have been successful in the end. It would have been successful if, in the higher view of politics, it could have been a success to extirpate or completely subjugate the native race. In later times we have adopted the principle of political equality. Whatever laws and institutions we thought good for ourselves were thrust upon the people of Ireland, a population totally different in temperament from the Anglo-Saxon. The results, as it might naturally have been expected, have not been uniformly happy. In our own times we have given the Irish complete religious equality. In the Land Act we have given such protection to the interests of the Irish tenant as no legislature has ever sanctioned before, and we have offered the mediation of the State to adjust their differences with their landlords. Last, not least, the patience of Parliament has been inexhaustible in listening to the tale of Irish grievances.

And now, having done all this, having done all that seems practicable for a united Parliament to conciliate and to pacify, what reward have we received? Have we won the gratitude of the Irish? Have we created a feeling of contentment? Is the hatred of the Roman Catholic Celt less inveterate than it was fifty years or a century ago? With pain and mortification we must acknowledge that no indications whatever appear of the dawn of brighter days. It is maintained by Opposition speakers that the present situation of Ireland is attributable entirely to the hesitation of the Government to assert its authority by the suppression of free speech and the imprisonment of the leaders of disaffection. I wish I could believe these statements. It would, indeed, be an easy solution of our difficulties if it were possible by a change of Ministry to reconcile the Irish to our rule. Who can doubt that the present Government would gladly resign their offices in order to give such a priceless boon to their country? For my own part I maintain that the Government were justly entitled to hope that their generous intentions towards Ireland would be appreciated, and that special measures of repression would therefore be unnecessary. To gag the Press and to deny the right of public meeting is a policy alien to the whole spirit of our Government and Constitution, from the time of Magna Charta downwards. It is by giving them their freedom, and by granting the most ample guarantee for personal liberty, that we have made the authority of our Government respected, and have secured the cordial adhesion of many and diverse populations in every portion of our world-wide empire.

In all the vast dominions of the Queen, nowhere save in Ireland do we discover any signs of disaffection. It may be thought that such a result might be looked for in India, because the Oriental races are docile and submissive, but we have been equally fortunate in our dealings with other races. In Lower Canada, in the Mauritius, and the Channel Islands we number among our fellow-subjects large French populations. The Queen has no more loyal subjects. We have given them self-government, and they are contented under our rule. In our most recent acquisition of Cyprus a short experience has proved equally reassuring to the Greek and to the Turkish inhabitants.

It is idle to maintain that by the adoption a few months earlier of the measures which have been authorised under the Peace Preservation Act we should have prevented the estrangement which we now deplore in Ireland. That estrangement has its origin in the antagonism of race, and has descended through long generations to the times in which we live. Under a rule of liberty it has been more

outspoken, but it has not been more deeply felt than before. The hatred of the Roman Catholic Celt towards England is not new, but we are learning by experience that it cannot be kept in check by the means which have been found effective in former days. The disloyalty of Ireland is sustained by resources from without which have never before been brought into play.

During the last generation a vast emigration has been going forward from Ireland, and the Irish settlers in America, though they have prospered there, still cherish a bitter hostility towards England. Those hostile sentiments find a practical expression in lavish subscriptions to the funds of the Land League. It is by these means that large numbers of men are enabled to devote themselves, whether in secret or openly, to the direction of the insurrectionary movement, and, unhappily, so long as leaders can be found, the Celtic population of Ireland is ripe for revolt. The animosity—so far as it exists, and I do not know how far—which severs Ireland from England is at once socialistic and national, but the national feeling is the real stumbling-block to British statesmanship. Where the laws are just and equitably administered—and it is the firm resolve of the people of England that this shall be the case in Ireland—the socialistic movement can be subdued, because all the owners of property, on however humble a scale, can be won over to the side of the Government.

I have the more confidence in the healing influence of just laws upon the social disaffection in Ireland because the tenantry have in numerous cases received cruel treatment, and often from landlords almost as poor as themselves. We have a proof of this in the decisions of the sub-commissions of the Land Court. It is no answer to say that the majority of the landlords have been easy-going and even generous. As the Devon Commission truly said, a single case of hardship, under the sanction of the law, will create a feeling of great uneasiness throughout a wide district. When the Land Act has been longer in operation such cases of oppression will not be found, but in Ireland more than this is demanded by popular antipathy. In the present condition of Ireland, and in the existing state of public opinion in this country, the duty of the Government is clear, and they have done their best to fulfil it.

It is idle to suppose that the Legislature has completed its task in relation to Irish affairs. Far greater changes than any which have hitherto been sanctioned may yet take place, but those changes, if they are to produce permanent good, must be both gradual and approved by the great body of popular opinion. In the meanwhile

the just rights of property must be protected, and crime must be prevented. It is not for me, a subordinate member of the Administration, to speculate as to the future, or to express an immature opinion. It is sufficient to say that I gave my votes for the Land Act in the firm conviction that that measure was inevitable and the best solution of the question which was practicable. For the Government, I assert that they have thus far done all that in the circumstances was possible to vindicate the authority of the law. For the future—the dark and troubled future—it is a source of deep satisfaction to know that we have as our leader the ablest and the most generous statesman whom the public life of England has produced.

Position of
the Liberal
party in
Hastings.

Turning from Imperial to local matters, I shall venture to make a few observations on the political situation in this constituency. The most sanguine Liberal must admit that, in 1881, we are not as we were in 1868, when you first returned me to Parliament. We have sustained defeats both at the Parliamentary and the municipal elections. We have lost in Sir Ughtred Kay-Shuttleworth a very valuable member of the House of Commons. I trace these defeats, in part, to general causes. There is reason to believe that a community, largely composed of persons in the enjoyment of comfortable competencies, is not exactly the quarter in which the party of progress would look for the most earnest and vigorous support. The strength of the Liberal party is to be found in the industrial centres lying north of the Trent. It is the demand of those constituencies which makes the Liberal party a necessary feature of English politics. Without us you would have revolution. When you returned Mr. North and myself as your representatives, these considerations were appreciated by the people of Hastings. The claims of the masses were recognised in this borough, which had so long had the responsibility of returning two members to Parliament, while populations far exceeding you in numbers were unrepresented. I cannot believe that the Liberal cause in this place is lost for ever. We must do more for the political cultivation of the less instructed electors. It is easy to understand the Conservative tendencies of the wealthy, but when a poor man, whose bread has been freed from taxation and whose vote has been given to him by the exertions of the Liberal party, turns round on his benefactors, such conduct can only be explained by his ignorance of politics. I have had to contend against many influences which would lead me into the Conservative camp; I have nothing to gain by any change that may be proposed, but I know, as all who have studied history must know, how dangerous

it is to be guided in politics by a blind devotion to personal interests.

Ye friends to truth, ye statesmen who survey
The rich man's joys increase, the poor's decay,
'Tis yours to know how wide the limits stand
Between a splendid and a happy land.

I have therefore thrown in my lot with the party of progress and reform, and I have never yet had cause to regret it. More especially do I count myself fortunate in having had for my leader from the time when you first sent me to Parliament the most illustrious statesman of modern times. Mr. Gladstone's consummate abilities have made him the object of the taunts and abuse of political foes; but those who can look upon public affairs without the prejudice of party will give to that great man the honour to which he is entitled for devotion to the noblest objects of statesmanship, for the varied and consummate gifts which he brings to bear on the most difficult questions of legislation and administration, and for the encouragement which he has given to culture by personal example. Above all this, Mr. Gladstone has maintained through half a century a spotless reputation. He has never been prompted by motives of personal ambition to take part in the trickery of politics. His high character is a tower of strength, and it is because they know they can trust him that the leader of the Liberal party possesses the hearts of the people of England.

It is time that I should bring these observations to a close. I have only to announce to you as a parting word that whenever a general election takes place I shall consider it my duty to the Liberal party in this borough to present myself once more as a candidate for their suffrages. In seeking to continue your representative, I am not influenced by personal ambition; I have no desire for political advancement. For any services I may have rendered I have been rewarded beyond my deserts. I am thankful to you for having given me the opportunity of devoting the best years of my life to the public service, but if you should now think fit to remand me to a more private station, I shall accept your decision without a murmur or a sigh. Of my claims to your continued support it is for you to judge. As you all know, I have devoted myself to a particular line, in which I hope that I have been useful. Of your local interests I have not been unmindful. Three times already you have pronounced in my favour, and I shall look for a like result on a future occasion, even though my seat should be attacked by a candidate of boundless

resources. Where the appeal lies to large communities of men it will generally be found that substantial justice is done. It would be unjust to put aside an old servant whose fidelity has borne the test of many years, and I still indulge the hope that the sentiments of affection which bind me to the people of Hastings and St. Leonard's will be reciprocated by my indulgent constituents.

PART V.

OUR NAVAL RESERVES.

SECTION I.

INTRODUCTION.

INTRODUCTION.

Of all problems in Naval Administration, the formation of reserves of seamen is the most important and perhaps the most difficult.

Need of organisation.

Admitting that it is the imperative duty of a statesman to avail himself of the resources which are furnished to his hand by a thriving and busy commerce, as the true naval defence of his country, it would be vain to rely upon those resources, as available for national defence, without careful organisation in peace. This has been fully recognised by those maritime Powers by whom compulsory service has been established, and their task has been comparatively easy. Under our more liberal institutions, reserves, whether for the Army or the Navy, can only be provided by a great expenditure both of time and money. The Crimean war exposed the weakness of our resources for manning the Navy. Raw levies of landsmen were hurried on board our fleets, and, for many weeks after the opening of our campaigns in the Baltic, our ships were but imperfectly prepared to meet an enemy. After the conclusion of the war an inquiry was undertaken by a Royal Commission under the direction of Lord Cardwell, and a scheme was worked out which remains unchanged in all its leading features, and which has been entirely successful. We have not attained to the numbers recommended by the Commission, but we have a force at our disposal fully equal to the probable demands for the manning of an armoured fleet.

A strong Reserve necessary.

There may be a lingering feeling of distrust, or even jealousy, in the Navy towards the Naval Reserve. Some officers may think that an equal sum spent on the Navy proper would secure a more tangible result. But all must admit that an efficient and numerous reserve would be of far more value, in an arduous and protracted campaign, than a few more seamen permanently maintained in the Navy during peace.

In olden days our merchant seamen may have distrusted and

disliked the naval service. These ancient prejudices, now happily passing away, will be more and more effectually removed in proportion to the pains which are taken to make the advantages of the Royal Navy more generally appreciated and understood.

Former prejudice in the merchant service against the Royal Navy.

Our ports are still too seldom visited by men-of-war. According to the unanimous testimony of naval officers, the presence of our fleets would serve to awaken in the merchant service an interest in the Royal Navy, which can never be felt unless the two services are occasionally brought into contact with each other.

‘Wherever the Royal Navy is best known, there the seamen are most ready to join it.’ Hampshire, Dorsetshire, and Cornwall, the counties in which our dockyards are situated, supply the greater number of seamen to the Royal Navy. It is our duty to encourage by every possible means the loyal sympathies of our seafaring population.

As one of the representatives in Parliament of an ancient Cinque Port, I am reminded of the illustrious efforts of our commercial marine in the destruction of the Spanish Armada. Compared with the navies of modern days, the scale of our operations in those distant times may appear insignificant. All our sailors, in the reign of Elizabeth, amounted to about 14,000 men; and there were not more than four vessels belonging to the merchants which exceeded 400 tons; but it still remains a memorable fact that a Navy, whose splendid achievements fill one of the brightest pages of our history, was mainly composed of vessels equipped by the commercial towns and the nobility and gentry of England. Of the 140 ships which were assembled to oppose the Spanish Armada, only 28, according to Hume, belonged to the Royal Navy; and those renowned seamen, Drake, Hawkins, and Frobisher, who commanded the fleet under Lord Howard, were masters in the Merchant Navy.

The Armada overthrown by a fleet equipped by the mercantile marine.

Descending to later times, we may refer to the evidence given to the Lords’ Committee on the Navigation Laws by Admiral Sir George Byam Martin.

Evidence of Sir Byam Martin, quoted by W. S. Lindsay. ‘Hist. Merchant Shipping,’ vol. iii. p. 178.

The merchant service, he held, was everything to the Navy, while the Navy, he was convinced, could not exist without it. He was unable adequately to express his surprise at the loose assertions which had been made, for every person who remembered the muster of the Navy immediately preceding the war in 1793, could not fail to know that the glorious victory of June 1, 1794, under Lord Howe, was gained by the merchant seamen of the kingdom. We had not then, he said, 20,000 men, and these men were scattered over the globe when the war broke out; it was therefore the merchant service

which enabled us rapidly to man some sixty sail of the line, and double that number of frigates and smaller vessels. By promptly bringing together about 35,000 or 40,000 seamen of the mercantile marine, Admiral Gardiner was able at once to proceed to the West Indies with seven sail of the line, nine frigates and sloops of war; Lord Hood to man twenty-two sail of the line, and a large number of frigates and sloops, with which he occupied Toulon and took Corsica; while, by its aid, other squadrons were sent to America and to the East Indies to protect our interests in those quarters. The command of seamen from the merchant service also enabled Lord Howe to occupy the Channel with twenty-seven sail of the line and numerous frigates, thereby affording security to our own homes, and the means of protecting our colonies and commerce by detached squadrons.

Our naval
supremacy
unshaken.

A Navy unsupported by an extensive mercantile marine is a hothouse plant, which may indeed produce great results for a time, but cannot endure the severe strain of a long-protracted war.

No nation can be a really formidable naval Power which does not possess an adequate maritime population. Russia, a half-Oriental, and Turkey, a semi-civilised State, can purchase or build ironclad ships; but their maritime resources would speedily be exhausted in war, because they lack the support of a flourishing mercantile marine.

Napoleon possessed a fleet of eighty line-of-battle ships, a force quite sufficient to have enabled him to contend with England for the mastery of the seas. But all his naval operations failed, because unsupported by a vigorous merchant service. The successive rulers of the Russian empire have made great efforts to create a powerful Navy. Under Peter the Great, Catherine II., and the Emperor Nicholas, the utmost pains were bestowed on the Russian fleet. The Crimean War revealed how fruitless their efforts had been. The United States have never maintained a large standing Navy; and yet they are justly reckoned amongst the most considerable of the maritime Powers.

Every statesman who has been responsible for the administration of the Navy must have been deeply impressed with the necessity for an adequate reserve. In giving evidence before the Committee on the Admiralty of 1858, Sir James Graham said:—

‘My attention when I was last at the Board of Admiralty, from the end of 1852 to 1855, was very much directed to the urgent necessity of providing a reserve of seamen available at all times, and measures were taken to create such a force.’

The great plan for the creation of the Royal Naval Reserves as at present established was originated by the Manning Commission of 1859, under the guidance of Lord Cardwell. The details of their schemes will be examined in a subsequent section; but the main arguments for the constitution of a powerful reserve as set forth in their report, may be quoted here as an appropriate introduction to the present inquiry:—

‘The evidence of the witnesses, with scarcely an exception, shows that the system of naval impressment, as practised in former wars, could not now be successfully enforced. We speak,—not of any objections to that system, which may exist in our minds on the score of humanity or justice; nor of the political excitement to which, in the opinion of some witnesses, the revival of that system would give rise; nor of the strong and determined opposition with which, according to others, it would be met;—we speak rather of difficulties arising from the altered circumstances of the times. The sailor, who wished to avoid impressment, would have much greater facilities than formerly for desertion in foreign ports, and for his escape after his arrival at home. The improvements in gunnery, also, have effected a complete revolution in naval warfare, and have rendered it absolutely necessary that our vessels should in any future war be manned, not by a promiscuous collection of untrained men, such as impressment formerly provided, but by seamen who are practised gunners.

Impressment could not be carried into effect,

and would not provide trained men.

‘The French system, by which every seafaring man is liable to serve on board a ship of war during a term of years, and is bound to come forward when required, could not be successfully applied to this country, where the relative proportion between the merchant seamen and the Navy is so different. Added to which, it would be open to many of the objections which affect the system of impressment.

‘The ballot has been suggested, but we think it is open to most of the same objections, and that it would fail to provide any great number of men on an emergency. The ballot for the Militia would act on the whole adult population, out of which probably not more than 100,000 would be required at one time; the ballot for the Navy, on the other hand, would act upon a much smaller body of men, of which a much larger proportion would be required. Again, the ballot for the Militia would fall on a resident population; the ballot for the Navy on a floating population, a large portion of whom, when their services would be required, would be absent from the country. . . .

The ballot is open to the same objections,

and would press severely on the maritime population.

‘Looking to the very large naval armaments which we were

A further
force of
from 20,000
to 30,000
required

forced to maintain in former wars, amounting at one time to no less than 147,000 men, it seems desirable that we should be able to add to the reserves of which we have spoken a further force of from 20,000 to 30,000 seamen well trained in gunnery. The problem to be solved is, how far it may be possible to obtain from the mercantile marine and the seafaring population of the kingdom, a volunteer force of seamen, all trained in gunnery, who could be relied upon to come forward when their services were required. . . .

Its suffi-
ciency in
time of
war ;

The earliest and most disastrous consequences of war will fall upon the shipping interest. On them the greatest ulterior difficulty will be imposed of carrying on their business during the continuance of hostilities. Under any system of defence, the necessities of the Navy must withdraw seamen from the merchant service, and raise the rate of wages. If, then, by timely precautions during peace, we can diminish the probability that war will occur at all, and to this end nothing will conduce so much as a knowledge on the part of foreign Powers that our defences are impregnable ;—if we can secure that, on the outbreak of war, the Channel and neighbouring seas shall be at once rendered safe for ships and cargoes homeward bound ;—if we can abolish or modify the risk that the employment of seamen will be abruptly suspended by embargo or interfered with by impressment ;—if we can attach the sailor to his country, and prevent the disposition, which has hitherto prevailed, of seeking service under other flags ;—the owners of our commercial marine will reap the greatest advantage. To them, therefore, we look with confidence for a cordial and patriotic co-operation in promoting during peace a system which is intended to accomplish these results.’

precautions
in peace
most ad-
vantageous
to it.

Royal
Naval Re-
serve the
only re-
source for
manning a
war Navy.

The Royal Naval Reserve affords the best means of manning our fleets in the supreme emergency of war.

To some perhaps it may appear an unnecessary expense to create reserves of seamen in time of peace. It may be thought that, with a small addition to our ordinary naval means, we should be able to cope with the navies of every maritime Power inferior to our own ; and that, in the event of our being unhappily engaged in a war with the United States, our only serious rival, large numbers of seamen would be thrown out of employment, and readily volunteer for the Navy. It may be urged in reply, that, even if our ordinary trade were interrupted by war, the demands upon the merchant service, for the conveyance of troops and stores, would give full employment to our seamen ; and that it is accordingly essential to secure for the State, by the payment of an annual retainer, or by giving a bonus

to apprentices, a prior claim to the services of the best seamen we possess.

In a debate in the House of Commons in 1858, it was stated by Sir Charles Napier that the merchant service only furnished 400 seamen to our Baltic fleet in 1854, and 300 in 1855. The wages of able seamen in the merchant service trading to the Mediterranean rose from 45*s.* a month in 1845 to 65*s.* a month in 1855. In 1853 the number of seamen employed in the Royal Navy was 31,000, and in the merchant service 254,000. In 1854, the first year of the Crimean War, the numbers were 46,000 and 266,500 respectively.

Sir C.
Napier.

Crimean
War.

The relative numbers of the maritime population afford the most reliable standard by which the naval resources of the principal maritime Powers may be compared; and the superiority of Great Britain, as set forth in the following tabular statement taken from Admiral the Baron Grivel's work, *De la Guerre Maritime*, is established beyond all question:—

Comparative
resources of
maritime
Powers.

	Great Britain	United States	France	Norway
Total seafaring population	420,000	350,000	170,000	—
Available for the fleet	243,000	180,000	60,000	62,000

According to another estimate there are in the British Mercantile Marine 407,000 seamen, exclusive of men in British ships in the colonies and abroad.

The total number includes:—

Masters and mates (certificated)	38,200
Ditto (not certificated)	10,000
Fishermen	150,000
Other sailor men	151,000
Firemen	14,000
Apprentices	11,000
Boys in fishing boats	13,000

If the French system were adopted in England, and the naval conscription were extended to all the classes included under the regulations in force in France, such as the crews of coasters, fishermen, boatmen, and the workmen in the private shipbuilding yards and the dockyards, the English total would be from 700,000 to 800,000 men.

Total number of
British
seafaring
population.

While the numbers of the maritime population of France are inferior, the organisation for manning the Navy has been thoroughly developed by the Inscription Maritime, established under Louis XIV.

In the memorandum prepared by Mr. Pennell in 1852

Inscription
Maritime.

authority is attributed to the estimate of M. Languihais, a member of the parliamentary commission on the Navy, appointed in 1851. In that authentic document it was shown that France holds in hand a body of 60,000 seamen, of whom 40,000 are stated to be 'eminently fitted for war.' Deducting from the total number the 16,000 men (exclusive of officers) now serving in the (French) fleet, there remain 44,000 men in reserve, exclusive of marines, liberated seamen, landsmen, conscripts, &c., who, if called out, would swell the total number to about 120,000.

'Upon the best estimate that can be formed, it appears that these 44,000 men could be embarked within the undermentioned periods :—

In a fortnight	.	.	.	.	.	10,000 to 12,000
In a month	.	.	.	.	.	10,000 to 12,000
In two months	.	.	.	.	.	— 20,000
Total	.	.	.	.	.	44,000

The efficiency of the organisation of the Inscription Maritime was fully tested in the Franco-German war with results which were placed on record by Admiral Jurien de la Gravière in *La Marine d'Aujourd'hui*.

'Quand la guerre éclata, la France fit appel aux ressources de l'inscription maritime.

'En quelques jours, les équipages demandés furent au complet ; ils ne furent pas seulement au complet, ils furent admirables, entièrement composés d'hommes robustes, aguerris, et dès le premier jour prêts à faire campagne. Un embarquement de trois ans au moins sur les bâtiments de l'État les avait façonnés aux diverses fonctions qu'ils allaient être appelés à remplir. Toute médaille malheureusement a son revers. Pendant que les ports de guerre se réjouissaient, la consternation régnait dans les ports de commerce.'

French
maritime
conscript-
tion.

The most experienced shipowners and merchant captains of France were examined before the Committee of Inquiry on the French Merchant Service, which sat under the presidency of M. Rouher in 1862. According to their unanimous testimony, the conscription was the principal cause of the stagnation in the maritime development of their country. Cases were cited of gentlemen, holding degrees from the University of France, who had gone to sea comparatively late in life, and reached the rank of chief officers in large steamers, who had been compelled to serve in the Navy for three years as ordinary seamen. The obligation to serve in the Navy in France commences at the age of twenty and continues to the age of fifty. The dislike to this liability deters a large number from going to sea.

This opinion is confirmed by M. Xavier Raymond in *Les Marines de la France et de l'Angleterre 1815-1863*: 'La France est moins avancée qu'elle ne l'était au jour où Colbert publia ses fameuses ordonnances sur la marine, car notre armée navale d'aujourd'hui n'est guère plus nombreuse que celle de Louis XIV.

M. Xavier
Raymond.

'Le chiffre de la population maritime est resté et reste stationnaire, parce que le régime que l'on a imposé aux marins a dégoûté de la profession un grand nombre d'hommes en général, et particulièrement le plus grand nombre de ceux qui eussent concouru au développement de cette branche de l'activité nationale par leurs lumières, par leurs capitaux, par l'influence que donne une position sociale élevée au-dessus de la moyenne. A presque tous ceux-là, eussent-ils la vocation la plus décidée, on a pendant longtemps fermé l'accès de la marine. S'ils voulaient naviguer, il leur fallait entrer dans la marine militaire, il n'y avait pas d'autre débouché.'

On the other hand, it is but fair to acknowledge that the same aversion does not extend to the humbler grades of the seafaring population. When recently cruising on the western coasts of France, I had opportunities of ascertaining the views of many French seamen and pilots, and I was assured that the maritime conscription was not unpopular. It must, however, be observed, that in all cases my informants had already performed their service in the French Navy, and were looking forward to the early enjoyment of the pension, to which, at the age of fifty, they would be entitled. The conscription probably assumes a different aspect, according as the seaman has or has not performed his term of service in the Navy.

General
conclusions
as to In-
scription
Maritime.

There is reason to believe that the inscription when first established was popular with the seafaring population of France. Colbert's great object was to induce a greater number of youths to go to sea. He would not, therefore, have inaugurated a system calculated to deter them from becoming sailors. Since the modification of the regulations in 1867, the normal length of service in the French Navy has been reduced to six years. But notwithstanding the alleviation in the severity of the law, the conscription has become generally unpopular with the rising generation of sailors, and the abolition of the compulsory service in the Navy would be found the surest means of increasing the naval resources of France. In parts of Germany an effort has been made to induce people to become sailors by granting them exemption from military service. It was observed by M. Rouher, during the course of the inquiry over which he presided, 'Les Hambourgeois font des marins par l'exemption du

service militaire, tandis que nous, au contraire, nous les faisons par l'inscription.'

Impressment impossible.

In this country the spirit of liberty, which happily pervades all our political institutions, makes it impossible to rely any longer on compulsion as a means of recruiting for the Navy. Since the great war, we have had two Reform Bills, and it is certain that the operations of the pressgang, which, sixty years ago, was most unpopular, would now be impracticable. The loss of the former legal power to compel seamen to serve in the fleet is not, even from a naval point of view, a subject for regret. Even in days gone by impressment was a most unsatisfactory expedient. It is now impossible. The facilities of escape by railway and steamship, and the sympathy of public opinion with men torn from their homes against their will, would render impressment no longer practicable. The recent Reform Bill has happily so extended the franchise that no man, however humble he may be, is without a relative or friend in the electoral body. Imagine the agitation which would take place, and which would undoubtedly find expression in Parliament and the press, if the electors, their friends, or their relatives, were kidnapped and carried off forcibly to Her Majesty's ships under the cruel operation of the old law of impressment. In former days, when the law of impressment was in force, great difficulty was experienced in keeping men enlisted by force on board the ships to which they were appointed. Lord Nelson complained bitterly that his ship was compelled to lay off the Nore, at a distance of seven miles from the land, in the impress service; and declared that he was as much separated from his wife, as if he were in the East Indies.

Mr. Pennell.
Memorandum, 1852.

'Impressment,' as it was observed by Mr. C. H. Pennell, in his paper written in 1852, on the Manning of the Navy, 'is a measure which the country itself recoils from using. It is unsuited to the character of the age; harsh in its exercise; exhausting in its process; and more than problematical in its results. By the substitution of a volunteer service of trained seamen for the compulsory service of untrained men, we should seek to exemplify, on a large scale, the sound experimental wisdom contained in the old naval adage, "One volunteer is better than two pressed men."'

The number of men to be obtained by impressment has been much exaggerated. In 1814, not more than 30,000 men were obtained under the combined operations of bounties and impressment. Nor let it be supposed that impressment was a cheap means of securing seamen for the Navy. It was stated by Mr. Pennell that the impressment system cost in the nine years ending 1773, 1,359,156*l*.

Lord Nelson, in his paper on the Manning of the Navy, to which I have already referred, dwells strongly on the desertion which so commonly occurred in a fleet manned under the impressment system. 'It will be found,' he observes, 'that whenever a large convoy is assembled at Portsmouth, and our fleet in port, not less than 1,000 men desert from the Navy; and I am sure that one-third of this number, from loss of clothes, drinking, and other debauchery, are lost by death to the United Kingdom.'

The following statement, made by Lord Clarence Paget in the House of Commons in the session of 1860, abundantly confirms all that has been said of the inefficacy of impressment: 'During the years 1811, 1812, and 1813, the closing period of the great war with France, there were pressed into the service 29,405 men, while the number of those who deserted was 27,300, so that the total gain to the country during those three years, by impressment, was 2,105 men. But in order to bring those men thus compulsorily into the service, 3,000 good sailors had been employed on shore as pressgangs. Therefore the country actually lost about 1,000 men during those three years under the system.'

It would be unreasonable to rely on the lofty and unselfish patriotism of necessitous men serving before the mast. Mere enthusiasm would not induce the merchant seamen to join the Navy if employment were being offered at an increasing rate of pay. On the other hand, I do not believe that a large proportion of the men of the Royal Naval Reserves would desert if they were called upon to serve. The opinion of Admiral Key and of a great majority of the shipping masters is strong on this point. If, however, our just expectations were disappointed, and the men belonging to the Royal Naval Reserve did desert our flag, the law could be set in motion against them, and popular feeling would be as earnest in support of the measures which might be taken for securing the deserters, as it would be opposed to all attempts to enforce the arbitrary right of impressment.



SECTION II.

*NECESSARY STRENGTH OF OUR NAVAL
RESERVES.*

NECESSARY STRENGTH OF OUR NAVAL RESERVES.

The necessary naval force not an invariable number.

Our training system.

IN urging a renewed effort to improve and increase our Reserves it is assumed that the standard at which the Navy should be maintained is not an absolute but a relative quantity.

There is no difficulty in maintaining the force of blue-jackets in the Navy up to the present standard of 18,000 men, or any larger number which might be deemed necessary. The system of training boys in the service itself is undeniably efficient, although open to some objection on the ground of the great expense involved, and the separation which it tends to perpetuate between the Navy and the merchant service. The training ships afford to the sons of our labouring population one of the most eligible employments which they can select; and no difficulty is experienced in inducing any number of boys, who may be required, to enter the service.

Greater means of expansion required.

With a considerable reduction in our present force of seamen, we should still be perfectly secure against any conceivable combination of naval Powers against us. When the German empire has a naval force composed of only 3,500 seamen and boys; when our most serious rival in point of naval resources, the United States, is satisfied with a force composed of about 7,000 seamen; and when it is remembered that the *personnel* of the Russian Navy, though numerically large, is entirely an artificial creation (the total number of seamen in the Russian mercantile marine not exceeding, according to the *Almanach de Gotha*, 9,000 men), England may safely rest content with the actual state of her Navy in time of peace. But, inasmuch as our requirements in a time of war cannot be measured by the standard accepted by Continental Powers, it is essential that we should have at our disposal greater means of expansion. We ought, therefore, to possess the power of creating a Navy on an emergency sufficiently strong to protect all our more important lines of communication, and to defend our coasts from invasion. It is to a well-organised Naval Reserve that we must look for the means of manning the fleets which it may be necessary to equip in time of war.

A large standing Navy in peace is necessarily costly in this country, where the pay and pensions of seamen are far more liberal than under the compulsory system by means of which foreign navies are recruited. In France, the pay of the able seaman is 1*s.* 2*d.* a day; in Russia it is about 3*d.* a day; and in England it is 1*s.* 7*d.* a day. The comparatively high rate of wages established in our own Navy affords an additional argument in favour of the policy of looking rather to the reserves than the standing naval force for the supply of seamen for a war Navy.

Wages of
seamen
higher in
England
than
abroad.

The opening remarks of the memorandum prepared by the late Mr. W. S. Lindsay for Mr. Childers deserve the attentive consideration of every naval administrator:—

Memoran-
dum by
Mr. W. S.
Lindsay.

‘We possess elements of power not enjoyed by any other country; these and our wealth are in a great degree the true measure of our strength. Let us then consider how we can best utilise them in the emergency of war, so as to render less necessary the maintenance during peace of an expensive standing force, which interferes with our industry, the source of our wealth, and by increased and permanent taxation curtails our means, and consequently our power in the time of need. Voting supplies for war during the time of peace, so far from resembling the premium of insurance which prudent men pay for the protection of their property, a too common argument in favour of extravagant estimates, should, I think, rather be considered as depreciating the value of the stock which we ought to husband. If we had saved only two millions sterling every year out of the Army and Navy Estimates since 1815, and allowed them to fructify in the hands of the people, or appropriated them towards the reduction of the National Debt; or had we created a reserve fund against possible war, that comparatively small yearly sum, accumulating with interest and compound interest at the rate of 3½ per cent. per annum, would now have placed at our disposal more than three hundred and twenty millions, which I need hardly say would go a long way towards bringing to a speedy and favourable close almost any European war in which we are likely to be engaged.

‘When I entered Parliament in 1853, our Navy Estimates were under seven millions, but since the close of the Crimean War, or during the last twelve years of peace, they have never been less than ten millions, though in some years previous to 1853 they were only about half that amount. . . .

‘Steam and electricity have within the last few years most materially facilitated our means of communicating rapidly with all parts of the world, and have enabled us to place at almost any given

point a force sufficient to vindicate our rights in half the time we should have taken even in 1853.'

The necessary strength of our Reserves of the several classes is a point which must be determined by the Executive Government from time to time, according to the circumstances of the political situation. In the great war we had 145,000 men in the Navy. Sir Maurice Berkeley considered that the permanent force should be raised to 30,000 seamen, of whom 6,000 to 8,000 should be employed at home.

In a memorandum on the Reserves of Seamen for the Royal Navy, printed for private circulation, Sir F. Grey expressed an opinion that an addition of at least 15,000 *bonâ-fide* seamen would be required, with probably 7,000 men of other classes, and 2,500 officers, to raise our Navy to the war standard of 84,500 officers and men.

The Royal Commission of 1859 proposed to have 4,000 seamen in the home ports, with a reserve force of 11,000 Marines, the Coast-guard being maintained at a strength of 12,000, and the Royal Naval Reserve at 20,000 men. The actual numbers are :—Coast-guard 4,300, Royal Naval Reserve first class 12,000, second class 4,962, third class 76, Royal Naval Artillery Volunteers 1,209.

Our Reserves should be increased without a large additional expenditure.

'The introduction of mastless ships, the substitution of steam power for sails, of mechanical appliances for manual labour, and the changes in naval armament, have considerably reduced the necessary complement of a ship of war. Yet, while fully recognising the altered character of modern navies, the reserves of seamen, recommended by the Royal Commission on Manning, might be exhausted by the drain of a long-protracted war with a combination of naval Powers, whose attacks might be directed rather against the commerce than the fleets of this country.'

In the following paper by the Compiler, read at the Royal United Service Institution on April 21, 1873, Admiral Tarleton, C.B., Lord of the Admiralty, in the chair, an attempt was made to elicit the opinion of the naval profession with reference to the strength at which the reserves of the Navy should be maintained under the altered conditions of modern warfare.

There are three problems, which I will specially single out for discussion.

'I. What number of seamen ought we to endeavour to enrol, whether in the first or second class Reserve, or as Naval Coast Volunteers?

'II. To what extent may we venture to rely on the merchant service to provide officers for our Navy in time of war?

‘III. What are the most effectual means of raising and training a force for the especial purpose of coast defence?’

‘I proceed to apply myself to the first of the three problems, which I have submitted for the consideration of the Institution.

‘The inquiries, instituted in 1852, as to the probable requirements of the British Navy, elicited the usual divergency of opinions from the naval officers who were consulted.

‘Sir John Stirling estimated that 60,000 men would be necessary to man the Navy in time of war. Admiral Denman, on the other hand, believed that, on the outbreak of a war, a fleet of 100,000 men would be immediately required; but, inasmuch as of the 40,000 employed in 1852 only 15,000 were seamen, he believed that of the 60,000 additional men required for a war Navy, only 23,000 need be seamen. The effect of modern mechanical appliances, in relation to the manning of the Navy, was scarcely perceived at the time of the Crimean war; but the fact that the number of seamen and Marines employed in the British fleet, at that period, never exceeded 68,000, afforded some indication of the coming change.

‘In the recent civil war in America, the Navy of the United States was increased to vast proportions. Land defences of great strength were attacked by their ships. An effectual blockade was maintained along 3,500 miles of coast. A fleet of cruisers was despatched in chase of the “Alabama,” and other piratical vessels, to every part of the world. To perform these varied services, some 671 vessels were employed; but such was the effect of modern changes in naval warfare, that the number of men employed in the United States fleet never exceeded 51,000 men. The blockade of Charleston is one of the most striking examples of the reduced numbers of seamen required in modern naval warfare. The report of the Secretary of the United States Navy on Armoured Vessels, published in 1866, contains a despatch from Admiral Dahlgren, dated off Morris Island, January, 1864, in which the following observations occur:—“The completeness with which four little monitors, supported by an ironclad frigate, have closed Charleston, is well worth noting. These four monitors, which thus keep watch and ward, muster eight guns and 320 men, which is almost insignificant compared with the work done.”

‘The conditions of naval warfare have, in our days, been so completely revolutionised that the experience of the past affords but a slight clue to the requirements of the future. In 1805, a year memorable in our annals for the crowning naval victory of *Trafalgar*, 114,000 seamen and Marines were voted for the naval service. The number was increased, in subsequent years, to 147,000; 1

certain that our naval power derived no advantage from the increase in the numerical strength of our naval forces.

‘An eminent officer of the United States Navy, Admiral Goldsborough, has stated, in a memorandum addressed to his Government, that the most effective vessels for coast defence will be swift and handy armoured ships without guns, and to be used exclusively as rams. By the adoption of vessels of the type recommended by Admiral Goldsborough, the number of men in our flotilla for coast defence might be materially diminished.

‘The last Royal Commission on the Manning of the Navy, reporting in 1860, had not the experience of the American war as a guide for determining our probable requirements. But, inasmuch as their report contains the latest authoritative exposition of professional opinion in our own Navy, it deserves attentive consideration.

‘The following statement exhibits the whole amount of reserve, which they recommended:—

	Men
Reliefs in the home ports	4,000
Coastguard	12,000
Marines embodied	8,000
Ditto, short-service pensioners	5,000
Seamen, short-service pensioners	3,000
Royal Naval Volunteers	20,000
Naval Coast Volunteers	10,000
	60,000

‘Since the publication of the Report of the Royal Commission of 1859 naval warfare has been almost revolutionised. When on a recent occasion I introduced a motion in the House of Commons, on the condition of our Naval Reserves, I urged the appointment of a Select Committee to inquire into the subject, mainly on the ground, that in consequence of the immense changes which have taken place, the number of seamen required for the Reserve could no longer be taken as definitely settled by a report drawn up some fifteen years ago. How great a change has taken place in this regard was clearly shown in the able speech of Mr. Shaw-Lefevre, in which he pointed out that, at the date when the inquiry of the last Royal Commission was held, the flag-ship in the Mediterranean required a complement of from 600 to 700 blue-jackets, while for the present flag-ship, the “Lord Warden,” 200 are sufficient; and, if the “Devastation” represents the flag-ship of the future in European waters, then 100 able seamen will do the work for which, in the good old times of full-rigged three-deckers, a crew of 900 seamen was essential.

‘I believe I am correct in saying that at the present moment we have not more than thirty-two or thirty-three ironclads afloat adapted

for cruising in distant waters, or for service in which the aid of sail-power may be regarded as indispensable. Some years must elapse ere our ocean-going ironclad fleet can be increased to a total number of fifty vessels. If it be fair to take the crew of the "Lord Warden" as representing the average number of seamen required for one-half of our ironclad fleet; and if the complement of the "Devastation" may be accepted as the normal number for ships of her class; and, to judge from the naval estimates of the present year, one-half of our new ironclads will be mastless ships; then it would appear probable that we should require for the complements of a fleet of fifty of the most powerful ironclad ships, not more than 7,500 *bonâ-fide* seamen. For an equal number of ships of the type to which the flag-ship in the Mediterranean of fifteen years ago belonged, we should have required a force of 30,000 seamen. The inference seems to be irresistible, that in a future naval war we shall not require so many seamen as formerly for our ocean-going line-of-battle ships. Making every allowance, therefore, for the increased importance of the commerce, and assuming that in consequence of the withdrawal of the troops, the defence of the colonies will be in a larger sense than heretofore committed to the Navy, I venture to submit it, as my opinion, that we no longer require 20,000 seamen in our first-class Reserve. The first-class Reserve now numbers about 12,000 seamen, very carefully selected; and if 10,000 men responded to their country's call, we should find it difficult to make use of their services. Hence, I arrive at the conclusion that we are in a highly satisfactory position, as regards the numerical strength of our Naval Reserve.

'The policy of creating additional means of training seamen for the Reserve must depend mainly on the views entertained in the Navy as to the strength at which that Reserve should be maintained. If our present Reserve be really inadequate, then training ships with brigs attached as sailing tenders should be at once established, at least in London and Liverpool. If, on the other hand, the actual strength of the Naval Reserve is adequate, then naval reformers will not be justified in urging upon the consideration of Parliament proposals for training young seamen for the Reserves at the public expense.'

DISCUSSION.

Captain WILLES, C.B., R.N.: My excuse for speaking this evening is simply that, for three years and a half, I superintended at the Admiralty the Coastguard and Naval Reserve during the absence, I may say, of our gallant chairman from Whitehall. In the first place, I must on the part of the Navy thank Mr. Brassey for the very great

naval affairs. We are only too glad to see an honourable member who will bring naval matters before the House, and discuss them fairly, as he does; and we hope the time is not far distant when he will hold an important post, either at the Board of Trade or at the Admiralty. Mr. Brassey has, indeed, in his interesting lecture, raised some most important questions; and I fear that, in endeavouring to touch on some of these, I may exceed the limited time allotted by the rules of this Institution. Ten hours instead of ten minutes would still leave much unsaid, and I therefore trust I may meet with indulgence, should I be led to transgress. Mr. Brassey has alluded to the fact of there being so few naval members of Parliament. I shall be very glad if he, or anyone else, will tell me how that is to be remedied. To begin with, we are, as a rule, poor men, and secondly, it is very difficult for us to serve our profession and Parliament also. If we go into Parliament we must take a party side, and this too often injures our professional career. At the same time I think it is unfortunate for the service that we are not, like the Army, numerously represented; for, although I have a great respect for members of Parliament in general, it is almost impossible that any man should discuss, with advantage, purely technical questions of which he has had no personal experience. The retirement scheme of Mr. Childers I believe to have been for the good of the Navy generally, but it increased the difficulties in the way of naval officers sitting in Parliament. An officer cannot well enter the House until he is qualified for flag rank; then, after a few years, he either must treat his constituents badly by resigning his seat when he wants to hoist his flag, or relinquish the service altogether.

Mr. Brassey alluded to the remarkable divergence of opinion prevailing amongst naval officers. Well, it is certainly to be regretted, but cannot be remedied. We go to sea, when very young, under different kinds of officers. We often imbibed our ideas entirely from them, and they may be said to influence the whole of our future career. I particularly remember, for I was one of the Lifeboat Committee alluded to by Mr. Brassey, when the diversity of opinion, as the evidence given by the witnesses shows, was so remarkable.

Mr. Brassey invites naval officers to state what number of seamen, as a Reserve, would be required in case of war. Now, that is one of the most difficult problems he could possibly put forward. What war is it to be? Is it to be a maritime war or a European war? That is to say, is it to be a war with America or a European Power? If it was war with the latter, I believe, to commence, we are well provided, but if it is war with America, then we should have to cover the sea with 'Alabamas' to protect our commerce, and he would be a very clever person who could say how many. Then comes another question. What is to be the ship of the future? If the 'Devastation' is to be the type, the number required would be very small; but I believe the time is not very far distant, and that there are some of the younger members present who will see it, when armour will be entirely taken off our ships. We may not go back to three-deckers, but I believe we shall return to frigates and corvettes with many guns and large crews, then we should require a very large number of men

in the Reserves. But looking at the 'immediate future,' an expression made use of by Lord Dufferin's Committee which sat at the Admiralty last year, I believe we are tolerably rich. If the Naval Reserve could be raised again to the number which the Admiral in the chair left in 1869 (namely, 16,000), with our Coastguard and our Pensioner Force (which is very considerable), I think we might be quite happy. But the question is, how to keep up that 16,000. It is a very important subject. When the present Government came into office, I think the naval representative, Mr. Childers, held the opinion which I was sorry to hear Commander Gilmore again express this evening, of the Naval Reserve, and, you will remember, he called them out on a Whitsuntide cruise. It was a very bad time of the year, and we only collected 1,600 or 1,700; but Mr. Childers came back from that cruise convinced that, whether it was right or whether it was wrong to establish the Naval Reserve in the first instance, it never should be abolished. Admiral Key, who commanded the squadron, pointed out certain defects in the system, and he certainly did hit upon some of the blots mentioned by Commander Gilmore. The consequence was, a Committee sat at Whitehall (of which I was a member), and recommended considerable modifications, in order to remedy the evils pointed out by Admiral Key and other officers. What was the result? These restrictions, as they were called by Mr. Brassey, reduced the force to 11,500 men; but these 11,500 men were certainly prime seamen. In the meantime other difficulties arose, and there was no greater one than the Suez Canal. The Suez Canal has indirectly hurt our Naval Reserve, because, for the moment, it has swept away a large number of sailing ships, and has increased the number of steamers immensely, and the steamers that now go to India, China, and Australia through the canal are manned by inferior seamen, who are not qualified for the Naval Reserve. Again, the increase of steamers in our home trade has acted against us. I was at a seaport the other day, and meeting an old shipmate, I asked him why he had not joined the Naval Reserve. His reply was, 'It is impossible now, Sir. We cannot take our drills. These steamers along the coast come in and go out of port again so rapidly.' So great is the competition, that their cargoes are taken out and the vessels loaded again and started frequently in forty-eight hours, so that the men have not time to take their drill. Therefore, we have the Suez Canal and the immense increase of our steam commerce acting against us, and how the Naval Reserve is, under the circumstances, to be raised even to 13,000 efficient men is a puzzle.¹ I have been absent some months from England, and therefore only to-day read Sir Frederick Grey's pamphlet, and if anybody here has not read it, I

¹ Return from Board of Trade, December 21, 1872, points to a considerable decrease in the crews of steam vessels, thus—

Proportion of <i>men</i> to 100 tons.					
1854	.	.	.	.	7·47
1860	.	.	.	.	4·92
1870	.	.	.	.	4·67
1871	.	.	.	.	4·55

would advise him to do so. I was in the House of Commons when Mr. Goschen made the speech which Sir Frederick Grey alludes to, and for the moment I thought Mr. Goschen was right. He said that he did not consider it any part of the duty of the State to educate sailors for the mercantile marine. But it must, sooner or later, be done. Sir Frederic Grey says, very truly, 'We must keep up our Naval Reserve.' You cannot go back to the navigation laws. The competition is so great you cannot introduce apprentices forcibly into the merchant service, and therefore the State must help the mercantile marine. The men that we want for the Naval Reserve of the future must be trained men, for the gallant Admiral very properly points out, that those who were collected together in the panic of 1859-60 are not what we want now, and therefore, as the State gains by the competition and extreme riches of the country, produced, I believe, in a great measure by the abolition of the navigation laws, the Chancellor of the Exchequer must eventually spare a part of his surplus to assist the mercantile marine; and the men, in some way or other, must be passed through a short course of training in a man-of-war. How it is to be done I cannot tell you, for I know well, and so does the gallant Chairman, that, at this moment, we do not know what to do with the boys we are obliged to train for the Navy, for we have now to train every one of our seamen from boys. Instead of the merchant service being, as formerly, a nursery for the Navy, it is just the reverse, and positively the establishment of this very Naval Reserve, giving the men 10*l.* a year, tends to keep them out of the Navy. But it is a necessity. The Naval Reserve cannot be abolished, so that the sooner the State takes it up the better. We must have a larger force at sea in the Navy. We must have more unarmoured ships; we must have more regular training ships, and there must be a regular system for our Reserves as our lecturer has said, under some distinguished Commander-in-Chief. Then comes the very difficult question, 'What are we to do for officers in case of war?' I daresay Mr. Brassey is aware that every naval officer, whether on half-pay or retired pay, can, by the power now extant, be called upon to serve in case of an emergency; therefore, I think that it would be possible to get the necessary officers. They would be a little rusty, no doubt, but I believe many and many a young officer who for private reasons has retired from the Navy, would gladly come forward in case of an emergency, and therefore the officer difficulty may be got over. How to keep officers efficient for war is what no one can say. You cannot have a larger force. Parliament say, 'We will give you 60,000 men and the proper proportion of officers.' You cannot have any more, and yet if war breaks out to-morrow, that force must be trebled or quadrupled; but that we could get officers better than in the last war I thoroughly believe.

Captain COLOMB, R.N.: Mr. Brassey, although he appeals especially to naval officers, feels quite as strongly as naval officers do that this question is an imperial question— one which naval officers are not likely to view from a broad stand-point— not from the stand point from which it ought to be thoroughly and clearly viewed. The divergence of naval opinion was adverted to by Mr. Brassey, and was to a certain extent confirmed

by my friend Captain Willes. My experience of that divergence is this, that it is a divergence on the surface, and that if you bring two naval men of apparently completely opposite opinions together, and go a little below the surface—a little below the mere words that they happen to utter at the moment, you will find that there is a very much greater consensus of opinion than you would have at first supposed. I do not think that we must take American experience at all, unless we take it as making for an increase of our naval force. The American commerce, as we all know, entirely disappeared from the seas, simply because she was not prepared for a naval war.

The strength of the first-class Naval Reserve Mr. Brassey sets at 12,000, and considers it satisfactory, and I understand him further that he would diminish it by 2,000, and that he thinks 10,000 would be enough. Now, I agree with Captain Willes most distinctly and strongly on the point. I understand him to say, that in some way we must incorporate the mercantile marine; either by transfusing from the mercantile marine into the Navy, or from the Navy into the mercantile marine. I feel that now most strongly, and I think it has a larger bearing than that which concerns the Navy immediately. I think that we have, in recent events, very clear proof that unless the Government does take some steps towards assisting the mercantile marine in the manner suggested by Captain Willes, that great service will go on deteriorating, as we have some reason to fear it is doing now. Mr. Brassey asks have our own seamen deteriorated? I think we should find, if we took naval officers and examined them superficially—as I have stated—that some would say they have, and others would say they have not. But I think if you went a little closer and cross-examined them, they would say, ‘We never were in so fine a condition as to our seamen in the Navy as we are at this moment—taking the individual seaman.’ The point as to the officers of the Reserve, as Captain Willes says, is a very difficult one. I think that, carrying out the policy of diminishing the number of naval officers who are on the Navy List, and who are, therefore, intimately connected with, and interested in, the Navy, we run some very great risks. We come next to the Coast Volunteers; and I think Mr. Brassey, unless I am very much mistaken, is under a misapprehension as to the chief reason of the unpopularity of the Coast Volunteers. The objection I have always heard alleged against them has been that they were under a peculiar engagement—they were not liable to be called beyond a certain distance from the coast of England. That I have always understood to be the real objection to the force. Far-seeing men argue that in time of war, when you had got men, you could not pledge yourself to use them within a certain distance of the coast of England. You might want them anywhere. That, I have understood, was the real objection.

This brings me to another important point which Mr. Brassey has brought forward. I have viewed with the greatest alarm the growing feeling in England that our defence is round our coasts. Now, in the old times of our country’s history, it was a coast-defence certainly that we used, but it was a defence on our enemies’ coasts, to prevent them leaving their harbours, and that, I am certain as I stand here, is our true pol

Then Mr. Brassey advises that our Coast Volunteers should be increased and not even diminished, as I have before noticed. If you enter these men for service, and if you spend money, time, and trouble in training them, and if you engaged that they shall serve on board your ships not at a certain distance from the land, but where you want them, then I agree with Mr. Brassey that you have in those men a most valuable force. But if on the other hand, you are looking to train them for coast defence, I should be afraid. I had the pleasure the other day, through the kindness of Mr. Brassey, of seeing his Volunteers; and I am not prepared to agree with Captain Willes in his remarks upon that force, because, although the force may be small and may not be capable of doing much, and although it might cost a little money, yet in these times, I do think that however and wherever you can get the public really interested in the Navy, he who does it performs a really good office.

Captain J. C. R. COTTELL, late R.M.A.: With your permission, Sir, I should like to make one or two remarks. Mr. Brassey invited discussion upon a number of points, which were not only of importance to the Navy, but to the country at large. First of all, Mr. Brassey invites discussion with regard to the required strength of our Naval Reserves. Next to the efficiency of the reserves. Let us take a war with European Powers—and see what forces can be brought to bear against us. I think it will appear that the number of guns in ironclads that could be brought to bear upon this country amounts to about 1,800. Therefore, taking that as a rough estimate 1,800 guns may possibly be opposed against you, by a combination against you of all the civilised powers of Europe, you may fairly suppose that 1,800 of our guns would be a fair match, and, therefore, basing an estimate on the number of men required for the guns, you get at something like a possible calculation for the number of men you probably would require for manning the fleet to oppose a European combination. But if, as it is not at all within reasonable probability that the whole of Europe is going to be arrayed against us, you take two-thirds of this total number of guns, you will find that the number of men required for our ironclad fleet would be 10,000.

Now, with regard to the quality of the reserve. From some experience on board ship, and with military forces regular and irregular on shore, I confess that I regard, with considerable apprehension the numerical question of the reserves taking too prominent a place. I think it is a matter of very serious importance that discipline should be the thing to which we should first of all look. Now, where men are only brought together for a short period of training, it is very hard to get discipline. Drill is not discipline; the training of men at a gun is, no doubt, valuable and good, but you must not compare a man only so trained with a man who has been for years under discipline. This was shown very forcibly at the siege of Paris. In Paris, for three months they were training gunners night and day. No opportunity was neglected to create an efficient force of Artillery to hold the forts. After three months of training, night and day, the hour at last came when the training was to be put to the test, and those who remember the account in the *Times* of the fall of Fort Avron, will agree with me that

it is discipline, and discipline only, that will enable gunners, however well-trained, to stand the brunt of war. No good artilleryman would have given up such a position after one day's firing. Now, they must have known their duty after three months, but they had not the discipline; and I call your attention to that statement for the sake of showing that the mere fact of providing training at short periods may make a man handy at a gun—may make him know his duty at a gun—but unless you have had a sufficiently long opportunity for instilling into that man habits of discipline, in the hour of your great distress you may find that, although he is a trained man, he is not *all* the man you want to fulfil the duties required of him.

With regard to the remark which fell from Captain Willes respecting the officers, and with regard to the speech of the Secretary to the Admiralty (in reply to Mr. Brassey's very able speech upon Naval Reserves), in which he spoke about the difficulty there was in educating seamen, because there was no room on board ships for them, I wish to make just one remark. Captain Willes said, the difficulty was, that you do not know how to employ your officers in time of peace, and the difficulty that the Secretary to the Admiralty pointed out was that there was no room on board ship for them. Now, of course, one is very apt to get off a subject on to one's hobby; but I totally deny that that is a state of things which it is necessary should exist, or that it is a system which will last. You are paying 150,000*l.* a-year for the half-pay of naval officers whom you cannot employ, because there is no room for them on board ship. You are also, and I beg particularly to draw the lecturer's attention to this before the question of amateur officers is taken up at all, you are also paying 150,000*l.* a year to another class of officers (Marines), whom you are putting on board ship and educating for the purpose of being put on board ship, and when you put them on board ship you cannot employ them; you have nothing for them to do. Consequently, you are blocking up your ships, which ought to be training schools for all the men and officers that you should employ. You are blocking up and are filling every place with men who could be more useful elsewhere. I speak with regard to the Marine force, that is the Marine Artillery and the Infantry.

Captain GOODENOUGH, R.N.: My object in rising is to give a short statement of the numbers of men in the Naval Reserves of other countries, and I shall not violate confidence or state a word that is not in printed or published papers when I give a short sketch of them. As we all know, the most complete and most interesting Naval Reserve which exists in Europe is that of France, which has now existed some 250 years, has always been progressive, and as to whose discipline there has never been a single hitch or doubt. The numbers under that Naval Reserve Act of France are at this moment about 172,000 men,—that includes all the men of all ages, from eighteen to fifty. I do not mean to say that the whole of these men are efficient, but we may get some idea of the number of efficient men when we know that for some years past there have been about 15,000 men afloat, and about 7,000 men in reserve in barracks, and that behind these men there are in reserve double the number of drilled

men that are a *réserve* pay, making a total of about 65,000 or 66,000 men between the ages of twenty and thirty-six. They are not all born seamen, but the great majority are brought up to the sea from the age of fourteen or fifteen—fishermen and men who have been to sea in various capacities. Some 4,000 every year are drafted to the French Navy from the conscription of the army. These men are specially drilled to the exercise of small arms. A fair number of these afterwards enter the *Inscription Maritime*, which confers very great advantages on all who consent to join it and who reside at naval ports. I should be quite unable to enter into the conditions of the French Naval Reserve Act, but it is to be found in the French printed regulations, and is of the utmost interest. At all times in the history of the English Navy those who have sought to work out one registration of British seamen have been those who have had some experience of the French service, beginning with Lieutenant St. Lo, who was in prison in France and who when he returned to England made his remarks in a pamphlet on the registration of seamen, entirely derived from the French system.

There are about 80,000 seafaring men in North Germany. Those seafaring men are described as being not merely foreign-going seamen but as fishermen and also men who work about the docks and harbours. No large proportion of those men have passed through the naval service, but some 3,000 have been enrolled for some time past, and at the present moment there are some 5,000 serving. You may always say when you speak of any German force, that the force enrolled under their organic law has twice the number of its representatives in reserve; so that if there have been 5,000 enrolled in the German Navy there are 15,000 men, if all reserves are called out, without calling up the *See-wehr* or *See-sturm*.

In Austria very much the same number of men and very much the same law exist. In Italy something of a similar law exists; but there it does not suit so well, because they have an immense maritime population. Italy has a maritime population of 225,000, chiefly fishermen, but of whom a great number man those Genoese barques of which so many are employed in the carrying trade, and some few steamers trading to all parts of the world. The Italian law states that the seamen are divided into classes, each class being composed of men who reach the age of eighteen, during a single year. As there are a very large number of men, the Navy enrolls only, say, one-fifth of a class, but when the Reserves are called up for actual service, the law obliges the Government to take the whole of the class; therefore it has for every drilled man to take four undrilled men before it can touch the men of the other classes. I mention this to show that an organic law for the compulsory service of seamen does not suit all countries; it suits admirably a small maritime population, but it is not adapted to a large maritime population. The French system is the one which alone, as far as I know, suits every class in France admirably, for there their Navy is largely in excess of the protection required by their merchant service.

Reverting to Mr. Brassey's excellent paper, I think the most valuable suggestion which he has made, and the one most likely to bear fruit,

is that with reference to an Inspector-in-Chief of the Naval Reserve. Wherever that idea had its birth, and it has now been spoken of largely for some time, this is the first place in which it has had public expression, unless my memory fails me, and Mr. Brassey may have already spoken of it in the House of Commons. I think that from the date of the appointment of an Inspector-in-Chief of Naval Reserves, you may expect to see first of all the exact facts publicly reported and spoken of as to the condition of Naval Reserves, then an exact comparison between the men in one part of the country and in another, and finally the exact wants of the Naval Reserve made known as to officers. (Mr. Brassey : 'The comparison between year and year.') And also the comparison between year and year. There are many other points I should like to touch upon, but as the hour is so late I will merely advert to one, viz., as to the numbers of men who are likely to be required, and I think the speakers generally have seemed rather satisfied with the present number of men whom we can call upon for foreign service. I am by no means so : I look upon 10,000 men as very small, particularly when you consider that that is not a number that you will be able to lay your hand on at once. You will probably be able to lay your hand immediately on 2,000, and within a little time afterwards on another thousand. During the war between France and Germany the largest number of men the French had called out at any one time was over 72,000 ; it is true that a large number of those were on shore, but that does not afford any argument, and if we look at the commencement of a war we see the immense advantage which a large reserve gives. The French were able (although they did not use it), within twenty-one days, to fit out a fleet of ten or eleven ironclads and to have them ready to send to the Baltic. Everybody knows we could not do that. A point on which Mr. Brassey asked for our opinion, is that of the condition of merchant seamen. I am sorry to say I am not in a position to judge of the comparative aptitude and comparative worth of our merchant seamen at the present day ; but I take it that there exist at the present moment as large a number of good English seamen as there ever existed, but that the number has not kept pace with the wants of the merchant service. The whole question of this training of merchant seamen is a question very closely bound up with that of technical training in other trades and professions. We heard a great deal a few years ago about the want of technical training in all trades and professions. The trade of seamen is essentially one which requires technical training. In former years, where each ship had a large complement compared to what she has now, and where there was a large proportion of boys entered, the training of boys for their profession as seamen went on insensibly. Shippers got men as they wanted them, and therefore people did not care to inquire how they got them. But at the present day nobody wants boys ; they cannot be economically employed as hands, and therefore it is absolutely necessary that we should have a system of technical training which will prepare lads for their work as men afloat. Whether they are to get that technical training by the combination of merchants and local boards to found schools, or whether they are to get it by the assistance of the State, I do not pretend to say, but

hold the State must interest itself in the matter: and one way in which it can do so is by compelling the proper manning of merchant ships. We know that a great many are exceedingly ill manned, and we frequently hear of ships being manned by men of different countries, who cannot understand each other. That is a matter in which the State can interfere, by declaring that the ship shall be efficiently manned, and that the crew shall be inspected by a proper person before the ship goes to sea. That system will compel the local authorities and local boards to institute a system of training under which men could be brought up, so that ships might not be stopped by an officer of the central Government from proceeding to sea for want of men. There are three classes of Reserve of which Mr. Brassey has spoken, and when speaking of those for coast-defence I must say I have always thought fishermen and that class of men could be made most useful. We should want to defend our coast, not so much by guns, probably, although there we should require a certain number of men, as by a large extent by obstructions and torpedoes, and in that case we shall have to fall back on the assistance of fishermen, who know the soundings of the coasts, the creeks and estuaries, and are perfect hands in the management of boats. I must say I regret very much indeed that, in consequence of the better state of preparation of the Engineer officers and not for the questions of the day continually submitted to them, the defence of the coast of this country has fallen into the hands of the Engineers. It ought to have fallen into the hands of the Navy, but simply from want of preparation of naval officers in the use of electric torpedoes, the whole thing has fallen into the hands of Engineers instead of into naval hands. In Germany, where they have studied this point very closely, because they took up on their defence in a future war as being almost mainly confined to the defence of their coast, they had before their war with France a sort of combined system. There also the Navy was not duly prepared: they had no naval officers who had the amount of technical knowledge to enable them to lay down and fight with torpedoes, and therefore they were obliged to have a certain number of Engineer officers, to whom they attached a number of seamen, with naval officers to command them, who worked under them and carried out a certain number of experiments. At the conclusion of the whole thing was altered. They had then found out that the great difficulty in torpedo warfare and coast defence by torpedoes and obstructions was the management of boats: no amount of technical knowledge of torpedoes could enable seamen or Engineer officers to manage boats; only a seaman's experience was of any good there. Therefore they altered their whole system, and at this moment the defence of the coast of Germany is confided to a Torpedo Arm of the Naval Reserve, which numbers 300 men, always employed, and about 1,000 men when the Reserves are called up. Therefore I think that portion of our Naval Reserve could be very well employed in this manner.

MR. BRASSEY: With regard to the point on which I was very anxious to have the opinions of naval officers, namely, as to whether or not the Reserve we at present have is sufficient, I have heard, with the deepest interest, the opinions given to us by Captain Willes, Captain Goodenough,

Captain Colomb, and other officers, and I take it that I must accept it as the opinion of all those officers that our present reserve of 12,000 seamen is scarcely adequate to meet the demands of a naval war. If that be the fair representation of the state of opinion in the Navy, then I arrive at the conclusion that there is a good ground for recommending the adoption of some of those suggestions which were made by the Commission of 1859, with a view of assisting in the training of seamen to serve in time of peace in the mercantile marine, but who were to be available for the naval service in time of war. I have on various occasions endeavoured to promote the adoption of those means, but those whose duty it has been to defend the policy of the Admiralty have asserted that there was no necessity for a larger reserve than we have at present. But if I may venture to proceed on some future occasion, confident in the belief that it is desirable to have a larger reserve, I shall have a basis of operations which will give me a greater opportunity of promoting those measures which have been recommended by the Royal Commission. With regard to the number of officers, if the system of half-pay, under which we undoubtedly have a great number of naval officers in reserve, is not in itself objectionable, then I think we may dismiss from our minds any feeling of anxiety as to the reserve of officers. The present system does, undoubtedly, furnish a great number of officers, but a large number of gallant gentlemen are necessarily on half-pay. Then with regard to the Coast Volunteers. I have been taken to task very severely for saying that there had been a certain laxity in the enrolment of unfit persons in that force. But I find from the opinions expressed this evening that I had not made a very great mistake. I am glad to find gallant officers think that in our fishing population there are elements of strength for the country in the hour of need; and I am quite sure that if the proper means be taken, the fishermen could be induced to join the Reserve. They are, no doubt, a slow and somewhat suspicious body. I take it if you wanted to attract a large number of those fine hardy Scotch fishermen into the Navy, it would be a very imprudent thing to send an officer born in Hampshire to enlist them. A good Scotch name would be capital introduction to the fishermen of Scotland. They are a class of men whose confidence is not very easily won; but I do not despair of being able to attract the fishermen to join the Coast Volunteers. I am very grateful to the gallant officers for the kind terms in which they have spoken of my lecture, and I shall always take the deepest interest in the Royal Navy.

The CHAIRMAN : With regard, first of all, to the officers, I find that there are at the present moment 278 officers of the Royal Naval Reserve on our Navy List. Striking off seventy-eight of these as officers, who are honorary or disabled by age, and who might not be prepared to come forward, yet 200 of these would, I think, be exceedingly valuable for manning our improvised men-of-war (such as the Peninsular and Oriental line of steamers) with a gun mounted for the protection of commerce, and also in commanding transports. Last year, the Admiralty obtained an Order in Council for the enrolment of 200 midshipmen for the Royal Naval Reserve, to be taken from the 'Worcester' and the 'Conway.' These

young gentlemen are very much socially of the same status as ourselves; of good education; and no doubt they will be a very valuable supplement to the officers of the Navy. Then, with regard to the Royal Naval Reserve itself, I had to go into the figures, a short time ago, on the Naval Estimates, and I found, taking our peace Navy at 19,000 blue-jackets, we could maintain that force by the entry of about 3,000 boys, so that we are self-supporting as far as the peace Navy is concerned, and in the event of a war, we should then have to fall back on our reserves. We have, at this moment, something under 12,000 men in the Royal Naval Reserve. These are men who certainly are, whatever may be said by some speakers in this room, the *élite* of the mercantile marine. They are men who must have been five years at sea and one year an able seaman, and I appeal to Admiral Elliot and also to Admiral Keppel and Sir William Codrington, who have inspected the drill ships, to say whether they have not been surprised at the efficiency of these men at drill, and the ready way in which they manned the guns. I believe that they are reliable. I may estimate that the numbers that we shall be able to supplement the peace Navy by would be 6,000, that is estimating that one-half would be abroad, and these men with the Coastguard. The naval pensioners and the remaining Coast Volunteers would man all our ships with blue-jackets that we could possibly provide for them, and there would be then 6,000 men in reserve. I do not mean to say the number of our ships ought not to be very much increased on the outbreak of hostilities, but we should have enough men to start with, and then other men of the Reserve coming home would form a further reserve to fall back upon. With regard to the Coast Volunteers, and the strictures passed upon them, I certainly had recommended that they should be gradually let drop. As they were constituted, the Act of Parliament, in the first instance, ran, 'seafaring men and others.' That gave great latitude to the officers, who were very anxious to show as many as they could on their lists. In the next place, the Act ran that they were not to be taken more than 100 leagues from the land. The Duke of Somerset, when in office, had that altered, and they may be taken now any distance from the land; but, however, the class of men you wanted to enrol did not come forward. Those were the fishermen whom Mr. Brassey spoke of very rightly as being most valuable people for coast-defence and the manning of gunboats; but these men would not give up their occupations to go on board ship, to live for thirty days amongst people of different habits to their own. Therefore, they do not come forward, and we have only got the 'longshore men such as Lord Frederick Kerr has described. I quite agree with Mr. Brassey that if we could organise the plan of having gunboats to go to the great fishing centres we should be able to obtain the services of these men, and with a drill of, say, a week at a time, the men coming off in the morning and going ashore in the evening, you would be able to obtain as many men as you required to release your seamen for distant service, and to perform all the duties you would require on the coast and in the estuaries.

With regard to the Royal Naval Artillery Volunteers, I should like to say a few words. Mr. Brassey has taken great interest in the formation

of this corps, and I think that they do deserve great praise and encouragement for the way in which they have thrown themselves into this movement. It is the first time that there has been any movement towards the Navy of a purely voluntary character. The Volunteers hitherto are all paid and well paid, but these men had given up their time and at very great personal inconvenience have been on board the drill ship in the West India Docks, drilling through the winter in the evenings after their work has been over. I, myself, can testify that they showed very great proficiency in drill for the short time they were instructed, and the instructors tell me they never had people to instruct who showed so much intelligence or zeal in attempting to acquire a knowledge of the drill. The great difficulty with regard to them, if they are to be encouraged, is to give them facilities for training. Of course if, as Mr. Brassey says, he can obtain the formation at different ports of different corps, it would be necessary to provide gunboats for their training, and I do not know exactly where the gunboats are to come from. I am afraid we should find it very difficult to assist them in that way.

With regard to the Reserves in the Colonies, it is true that there are a number of seafaring men, fishermen, there, who would be available for their coast-defence; but I think we may safely leave it to the Colonies themselves to protect their own hearths and homes. They would have power to legislate for themselves, and a little encouragement from this country is all that they would require.

I will not detain you any longer, but will only say that these discussions are extremely valuable, because they are the only way of discovering our weak points, as the test of the efficiency of the Reserve can only be put in practice when the safety of the country is endangered.

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SECTION III.

*EFFICIENCY OF THE ROYAL NAVAL
RESERVE.*

EFFICIENCY OF THE ROYAL NAVAL RESERVE.

Efficiency
of the
Royal
Naval
Reserve.

IN point of efficiency the Reserve has fully answered all reasonable expectations, and has been highly commended by a long succession of distinguished naval men, who, as inspecting officers, have had the best opportunities of becoming acquainted with the force. The list of these officers includes, among others, Captain Gardiner, Admirals Ryder, Cooper Key, Warren, and Elliot, all of whom have spoken in terms of commendation of the Royal Naval Reserve, and have fully recognised its value to the Navy.

Opinions of
Admiral
Ryder.

In 1864, it was stated in the report of Commodore Ryder, that 4,258 men of the Royal Naval Reserve had been drilled in London, and that only 83 of them had been punished by fines. Their gun drill was as good as possible. In the discussion on the Naval Essays of 1878 at the Royal United Service Institution, June 21, 1878, Admiral Ryder said: 'As to our Reserves, I had the honour of commanding our Reserves for three years, and I believe the system is a thoroughly good one. I believe we have some 14,000 now in the first-class Reserve, and a few thousands in the second, also an invaluable body. Our Reserves, barring that they are much too few in number, are in a wholesome condition.'

Captain
Gardner
R.N.

Captain Gardner, in his report in 1868, stated that in a recent inspection he had seen 758 men. 'I have now to remark,' he continues, 'that the seamen of the Royal Naval Reserve seen by me at the outports and in the West India Docks during my tour, are prime seamen of the mercantile marine. The Northern men are chiefly employed in the Baltic, Greenland, and North American trades. Those of London and Bristol, &c., are in the East Indian, China, Australian, Coast of Africa, and coasting trades; the whole forming a fine, intelligent, able-bodied set.' Again in 1867, we are informed, in the report of Rear-Admiral Tarleton, that the eight commanders of the drill-ships are officers of experience, on whom reliance may be placed; and that there are, in the Royal Naval Reserve—

Sir Walter
Tarleton,
R.A.R.

	Men
Fit for petty officers' ratings	1,250
„ leading seamen	1,800
„ good able seamen	4,800
„ fair able seamen	1,150
	9,000

The conduct of the Royal Naval Reserve had been very good. Only one man had been dismissed from the force during the year.

In 1869, in the report of Rear-Admiral Cooper Key, on the cruise of the Reserve Squadron, the following observations occur: 'The seamen of the Reserve are little inferior in physical condition to the seamen of the Royal Navy. As regards the intelligence of the seamen of the Reserve, willingness to do their duty, and general conduct, all the reports concur in placing them on a par with our own men. They have in general made good use of the short periods allowed annually for drill; their knowledge of the great gun and rifle exercises is very creditable; and although few of them have had the opportunity of either drilling at our heavy guns, or seeing them fired, they adapted themselves readily to the new drill, and worked the 9-ton guns with steadiness when firing at a mark. It must be evident from the foregoing remarks that I consider the Royal Naval Reserve as a valuable means of manning the fleet on an emergency, or during war.'

Sir Astley
Cooper
Key,
K.C.B.

The favourable reports of 1870 and 1871 will be an encouragement to those who desire to improve the Reserves, in the belief that they will form a valuable addition to our naval resources.

Reports of
1870-71.

Admiral Warren, in his report from Sheerness, in 1870, says that he had inspected 783 men in ships at Harwich, the West India Docks, the Scotch ports, Sunderland, Hartlepool, and Hull, and considered them a very serviceable body of men, well forward in their great gun, rifle, and cutlass exercises.

Admiral
Warren.

Vice-Admiral Hon. C. Elliot, reporting from Sheerness, in 1871, says that he inspected the same ships as Admiral Warren, and that he saw 600 men. They were fine, able-bodied men, fit for the service, and apparently of the best class of merchant sailors. 'The opinion,' he says, 'I have formed of the whole body, as a reserve for the Navy, is a very favourable one. I was remarkably struck with the right goodwill with which they in general went to work at their drills, showing greater spirit, or *esprit de corps*, than I expected to find; and, on the whole, their knowledge of the drills was good for the limited time devoted to them. Their conduct while under instruction was, in all the ships, spoken of as highly.'

Vice-
Admiral
Hon. C.
Elliot.

efficient
more
ably
devel-

If there are men of the Reserve who are incapable or ill conducted, they ought to be discharged from the service. It is far better to reduce the number, and obtain at once that general efficiency in the Reserves, which a more careful preliminary inquiry will in future establish and maintain.

The carelessness with which the entries for the Reserve were conducted was the principal cause of the former complaints of the Royal Naval Reserve.

Admiral Warren, in his report of 1870, remarked: 'The register requires strict revision. There are many men who come to drill who have not been at sea for years, nor intend going again. At Dundee, I was told, some were gaining a living as cabmen; one was a chimneysweep; another I spoke to had been a stoker discharged from H.M.S. "Nile," thirteen years ago. At Shields, many of them work on the river. At other places on the East Coast, several were employed in the mines.

'In order to ensure their following a seafaring life after their entry in the force, when they appear for drill, they should be called on to produce proof to the commanding officer of the drill-ship as to how and where they had been employed in the interval.'

The following extracts from recent reports give the latest official impressions of the value and efficiency of the Naval Reserves. The first series of quotations is taken from Sir Walter Tarleton's report of his inspection in Scotland in 1876:-

'As the Royal Naval Reserve in the North of Scotland are principally employed in the whaling and fishing trade, and can only attend their drills in the winter months, I was obliged to select this season for my inspection.

'I proceeded, on January 7, to visit several drill-ships and Royal Naval Reserve batteries, and beg to submit the following report for their Lordships' consideration:—

L.S.
'Unicorn,'
drill-ship,
Dundee.

'I arrived at Dundee without giving any intimation of my coming, and immediately proceeded on board the "Unicorn" drill-ship, where I found 147 first class, and 11 second class, men undergoing their drill.

'The 1st class are very fairly efficient in great-gun, rifle, and sword exercise; and the 2nd class, who are only in their first or second year of enrolment, are quite as expert as might be expected.

'I mustered and noticed the men individually:—The 1st class have the appearance of good powerful seamen, and the 2nd class, though younger, are above the standard of the ordinary seamen in the Navy. Their average height is 5 ft. 6½ in. They do credit

to the instruction they have received, and the supervision of the commander. . . .

‘At Aberdeen I inspected 114 men of the 1st class, and 50 of the 2nd class, drilling on board the “Clyde.” The 1st class men were very good at all their exercises, and the 2nd class good; the physical appearance of both very good. The drill-ship is very complete and satisfactory, and the instruction of the men is carefully attended to.

H.M.S.
‘Clyde,’
drill-ship,
at Aber-
deen.

‘At Peterhead Battery I found 69 1st class men, and 19 2nd, all very fairly efficient in rifle and cutlass exercises, and steady, though somewhat slow, at the great guns. This is accounted for by there being only two 32-pounders on truck carriages, and the men do not get sufficient exercise. Two targets were shot away at a range of 800 yards. . . .

Peterhead
Battery.

‘At Kessock Ferry.—The “Netley” gunboat is stationed here temporarily until the arrival of the “Brilliant.” There were on drill in the gunboat and on shore 171 men, viz., 19 1st class, and 152 2nd. They were fairly advanced with rifle and sword exercises, which they undergo in a shed hired for the purpose. As might be anticipated, the men know little of gun drill, as the two guns available on board the “Netley” do not afford sufficient training for the number of men on drill at one time. The 1st class are on the average good A.B.’s, and the 2nd active and robust young men, who have already much improved, and, doubtless, will advance with each year’s training. . . .

Kessock
Ferry,
Inverness.

‘At Lerwick, in the Shetland Islands, I found 278 men assembled, of whom 115 were 1st class, and 163 2nd class. The first class are amongst the best seamen that this country produces, their average height being 5 ft. 8½ in. They are very attentive to their drills, and are efficient in rifle and sword exercises; but as there are only two exercising guns, and one 32-pounder for shot practice, they have not sufficient instruction to make them quick and expert gunners. The 2nd class are a promising and docile set of young men, very attentive under instruction and willing to learn. I consider they will be valuable as they get older and have more training. Their average height is 5 ft. 7 in. . . .

Lerwick.

‘The Shetlands are one of the most important centres of the Royal Naval Reserve in the United Kingdom. I am informed that nine-tenths of the male population, who are physically capable, go to sea, and, with few exceptions, they join the Royal Naval Reserve. It would seem to be good policy to foster this nursery of seamen, at a time when complaints are made of their scarcity in the mercantile marine, from which the Royal Naval Reserve are drawn. . . .

Stornoway. 'I next proceeded to Stornoway, where I found drilling, on board the "Flirt" and on shore, 128 men, of whom 4 were 1st class and 124 2nd, while about 20 more were waiting to be taken on, but whom there was no room to drill. . . . There are not the means at present of giving these men sufficient gun exercise, the two guns in the "Flirt" only being available; but those men I saw at the guns were profiting by the instruction, and in rifle and cutlass exercise they were fairly efficient. They are a robust athletic set of young men, averaging 5 ft. 7 in. in height, and presented a better appearance than I had looked for. Lieutenant O'Rorke informs me that they improve rapidly under instruction, and that those of the second year are much in advance of those of the first. . . .

'In concluding this report I would observe that I consider the Royal Naval Reserve to the north of the Tweed as amongst the best and most reliable seamen in the force. The 1st class, who are engaged in whaling, the Baltic and timber trades, are hardy and excellent seamen. The Shetlanders are particularly appreciated by shipowners for these qualities, and their steadiness of conduct and fidelity to their engagements.

'The 2nd class will be a valuable body of men after a year or two's training, and from being employed at home will always be immediately available.

'I do not anticipate the least difficulty in obtaining what men are required on the proclamation of war, and am convinced that they would serve the country with loyalty and devotion if called out.

'I am, &c.

(Signed) 'J. W. TARLETON,

'Admiral Superintendent, Naval Reserves.'

Sir Walter
Tarleton,
Report of
1877.

Let us now turn to the general remarks in Sir Walter Tarleton's report of 1877 on resigning the command of the Naval Reserves:—

'On a review of the Act for the establishment of a Reserve Volunteer Force of seamen passed in August 1859, and the state of the Reserves at the present time, 17 years afterwards, I think it must be admitted that it has fulfilled the intention of its framers. It was given to them to solve a question which had always been a vexed one and a source of anxiety to the country, viz., how to man our ships in the event of any sudden increase to our Navy, and to provide a sufficiency of seamen to carry on naval operations when war was declared, while the men so employed should be absorbed on the conclusion of peace in the mercantile marine.

'The difficulties found in obtaining men on the breaking out of

the war with Russia made a deep impression, and the resolution was taken not again to be placed in so defenceless a position, but there were many points which had to be considered before a scheme could be produced, the machinery of which should work.

Report of
Sir Walter
Tarleton,
1876.

‘The service of the seamen was to be voluntary, as conscription in this country could not be enforced, and the rude method of impressment would not be tolerated. One of the evils of that mode of raising men had been to create an almost insurmountable prejudice in the merchant seamen against the Royal Navy; they had also a dislike to drill, or soldiering as they called it, of any kind. They were actively employed in voyages to all parts of the world. In the face of these difficulties, it was a bold measure to make it lawful for the Admiralty to raise and keep up a number of men not to exceed 30,000 from the merchant service.

‘Again, the interest of the shipowners at first sight would appear to be opposed to the scheme, as it would deprive them in time of peace of the services of their servants for 28 days in each year, and altogether, should the men be required for the Navy, in time of war.

‘The practical working of the Act has shown that, in peace time at least, the shipowners have suffered no inconvenience. The men are permitted to take their drill whenever it best suits them, and at periods of 7, 14, 21, and 28 days, while on the other hand the qualifications insisted on on enrolment, and the medical examination, are guarantees for the character and ability of the Royal Naval Reserve man. The retainers which he receives and the prospect of pension operate as inducements to steadiness and against desertion, and altogether have a beneficial effect on the whole mercantile marine, so that the shipowners now give a preference to Royal Naval Reserve men whenever they can get them.

‘The prejudices of the seamen have been worn down by mixing with men-of-war’s men, when under instruction. The considerate treatment of the officers, and a month’s discipline out of the year, have also had a marked effect, and I have seen bodies of Royal Naval Reserve march and go through all the exercises with as much steadiness as a well-trained crew of men-of-war’s men. The result is, that there are now enrolled in both classes nearly 20,000 out of the 30,000 sanctioned by the Act.

‘The vital question is whether, after all the expense the country has been put to, and will have to bear prospectively, for the organisation and maintenance of the Royal Naval Reserve, will the men be forthcoming when they are wanted? This can be tested only in the day of trial, when the Queen’s Proclamation shall call the Reserve

Report of
Sir Walter
Farrer, &c.,
1875.

out for active service; but I hold that we have as reliable guarantees that the men will present themselves, as under any system that could be devised on the basis of voluntary service. The men have entered on an engagement to serve, they have received drill pay and retainers under this engagement, and, without being branded by public opinion, could not shrink from the fulfilment of their duty. As a fact, a great impetus was given to enrolment when the "Trent" affair pointed to possible hostilities with the United States.

• It would be doing an injustice to the *élite* of the merchant service to suppose that they are entirely devoid of patriotism, and would not desire to serve in defence of their country. Their prejudices against service in the Royal Navy have been in a great measure removed, and they would feel themselves competent from previous training to work the guns and handle a rifle and cutlass.

• On the other hand, should any reluctance be shown by the men, there are many ways by which the Government could enforce their service. The whereabouts of the Royal Naval Reserve, both at home and abroad, is carefully registered; the men at home could be taken hold of and brought to the nearest ship bearing the pendant, and draughted where required. Men abroad could be taken out of their ship by any man-of-war they might fall in with. On arrival of any ship coming from abroad in which it was known Royal Naval Reserve men are serving, a boat from the nearest man-of-war could board her and take only the Royal Naval Reserve men. The men forfeit all claims to pension or future pay who fail to comply with the call. Lastly, they are liable to be treated as deserters, and to incur all the penalty attached to that offence, should they fail to appear when called out.

• It has been proposed at different times to call out the Royal Naval Reserve as a rehearsal, and as a means of ascertaining what number could be embarked on short notice, also to accustom them to service in men-of-war. As a test of numbers I consider the attempt made some years ago to embark a portion afforded no reliable data. By dint of agitation at the northern ports, a certain number of volunteers were collected, but as it was entirely optional with them to go or stay, the majority were not willing to give up the employment in which they were engaged.

• I can understand that under certain circumstances it might be a desirable policy for the Government to embark the Royal Naval Reserve in Her Majesty's ships, but in such a case I am of opinion that no option should be given to the men. The Admiralty should order their embarkation under Clause III., and the men should be subject to the penalty declared in Clause XX. of the Royal Naval Reserve Act, 22 and 23 Vict. cap. 40, if they did not attend.

‘As to the importance of embarking the men to accustom them to service in a man-of-war, I think this has been over-rated, so far as the first class are concerned. These men are seamen, and do not require instruction in seamanship. They are not used to move aloft with the same alacrity as men-of-war’s men, but this is a small matter. What the merchant seaman requires is to be made familiar with the great gun exercise, and to handle the sword and rifle—to be steady and silent under instruction, and to obey implicitly the orders he receives. This training he will receive on board the drill-ship especially set apart for this service, or at the batteries representing a section of a ship, better than on board of a man-of-war, where his teaching interferes with the routine of the ship, and where he is surrounded by matters to take off his attention, and is looked upon as an intruder by the ship’s company. In most cases where the men have been drilled in the district ships, the result has not been satisfactory, and there has been a difficulty in embarking or disembarking them, or providing for their instruction in the ship’s occasional absence.’

Report of
Sir Walter
Tarleton,
1876.

Sir Walter Tarleton was succeeded by Admiral Phillimore, and on resigning his command in 1879, he again reported in favourable terms of the constitution of the Naval Reserve.

The number of Reserves sanctioned by Parliament is 30,000. The Reserves have, however, never attained that number, and the vote for several years has been for 20,000. Even this number is not obtainable in the present state of the mercantile marine, except by admitting a Second-class Reserve from the fishing populations qualified for the duties of ordinary seamen afloat. The number of able seamen in the Reserve fluctuates, as reported by Sir Walter Tarleton, between 12,000 and 13,000.

The actual numbers in—

	First Class	Second Class	Third Class
November, 1876, were . . .	12,506	5,401	None
November, 1879, were . . .	12,000	4,962	76

Care has been taken, however, to eliminate from the first class all those who, in the first period of their enrolment, had settled down to a shore life, and given up the sea as a profession, and the present force is composed of a very fine body of seamen, the leading and best men of our merchant ships.

Since the publication of a former pamphlet by the present writer, much new testimony to the efficiency of the Naval Reserve has been privately supplied from naval officers of all ranks and wide experience. Commander Cyprian A. Bridge, R.N., when serving

Com-
mander
Cyprian
A. Bridge,
R.N.

Opinion of
Com-
mander
Cyprian
Bridge,
R.N.

in the 'Hawk,' at Queenstown, had about 140 Reserve men, who went through their course of drill in parties of a dozen or twenty at a time. It was said, on good authority, that the Cork men were the least good specimens of the whole Naval Reserve. Yet, the men who were drilled on board the 'Hawk' 'were admirable in *physique* and in *morale* also. Indeed, if they had a fault, they seemed too respectable.' Captain Bridge 'did not notice among them one of those fine, dashing, devil-may-care fellows, who are alternately winning and breaking the heart of their commanding officer.' He commanded a gunboat for some time, and had five Reserve men, who had joined the service, in the crew. They were simply invaluable; and he 'did not notice about them the fault, generally attributed to merchant seamen by naval officers, of absence of personal cleanliness.' 'I would,' he writes, 'willingly have parted with any twelve other men rather than those five. All our Reserve men were admirably drilled, and they had that intense love for gun-drill which I have noticed animates all merchant seamen who ship on board men-of-war. Whenever I hear an officer decrying the Reserve, I make a point of questioning him as to his knowledge of the force, and I am able to assert that I never heard a single one, who had had any personal experience with the Reserve, say a word against the force; except one individual, who complained that we were paying the finest men in the country 6*l.* a year to keep out of the Navy.'

Opinions of
Com-
mander
Parsons
R.N.

In discussing the value of the Naval Reserve generally, Commander Parsons, of H.M.S. 'Dædalus,' observes: 'The Admiralty should decide for themselves this question—"Do we want men fit for topgallant and royal yardsmen of a flying squadron, or do we want men who could work the anchor and cables, man the boats, steer, heave the lead, and fight the guns of heavy ironclads in time of war?" If you want great smartness aloft, not many men are to be got from the merchant service. If the efficient performance of the other duties enumerated constitutes a sufficient qualification—and undoubtedly, in my opinion, the latter is what you really want—then many good men can be obtained from the merchantmen.' 'You may,' he adds, 'be interested to know that I consider the men who drill on board the "Dædalus" in several respects quite equal to the average of our own ships' companies. The gunner, who drills them, who has lately joined from H.M.S. "Cambridge," tells me that he considers them, at the end of their 28 days, quite as well up in their drill as the average man-of-war's man in sea-going ships. We have been strict, and have weeded out some indifferent men, and possibly we may have frightened away a few more.'

Commander Brent, after three years in command of a drill-ship, summed up the opinion which he had formed in highly favourable terms:—

Com-
mander
Brent, R.N.

‘1st. The First-class Reserve man is a *bonâ-fide* able seaman.

‘2nd. The Second-class Reserve man is a good ordinary seaman, thoroughly accustomed to the sea.

‘3rd. The *physique* of the men is exceptionally good of those I saw, an average of 5 ft. 6 in. of height, 10 stone 8 lbs. of weight, and 35½ inches of chest measurement.

‘4th. The men pay attention to their drills, becoming as a rule efficient.

‘5th. That their conduct is good on the whole, the leave-breaking giving the greatest trouble, and that, as far as was required of them in the drill-ship, they adopted without trouble man-of-war ways.

‘I would that the Reserve man knew more of the Royal Navy, and that both officers and men of the Royal Navy had more to do with him. I wish to see a closer connection between the two, a connection made by acquaintance, which is far better than any lecture. For this reason I should like to see an admiral in command of the Reserves with a regular staff; not a retired admiral, but one on the active list who has just been in command of a squadron, with his staff and flag in one of the drill-ships, and having a tender that he might move about the coasts. I should also like to see captains for the Reserve districts, and in the drill-ships, besides the commander, a lieutenant; none of the officers to stay too long, except the civilians, who, as at present, should be seniors; the same routine of drill carried out in each drill-ship, and emanating from the admiral; all drill-ships alike, and as the officers come from seagoing ships, like all ships in the service afloat, the same regulations and discipline; a perfectly strict naval discipline through all, a distinctive dress for the first-class men. This is so much needed, that I must press it for a moment. The second-class men are dressed as men-of-war’s men, and right well they look, and the first-class man should be dressed the same; but the money to pay for his clothes should come out of his retainer, and not his drill pay. He comes on drill as a means of gaining a livelihood, and a few shillings out of the guinea is of vital consequence, whereas out of the retainer he would not feel it so much. The order for a dress, however, should only be compulsory on all men entering, or when making a fresh engagement.’

While formerly attending the drills on board H.M.S. ‘President,’

Personal
experience
on board
H.M.S.
'President.'

I had opportunities which, under ordinary circumstances, it is not easy to obtain, of becoming personally acquainted with the seamen belonging to the Reserves. The impression left on my own mind is decidedly favourable. The men of the Reserve exhibited much intelligence in learning the gun-drill. As a rule, they evinced real interest in their work. During the dinner-hour you will invariably see some of the Reserve men taking their friends round the gun-deck of the 'President,' and explaining, with evident pride in their own recently-acquired knowledge, the working of the guns, the adjustment of the sights, and the mechanism of the breech-loading rifles. The intelligence exhibited by the seamen of the Naval Reserve in picking up the details of the great-gun drill was, in many cases, quite remarkable. A thorough knowledge of the drill is not easily acquired; and the duties of the number one of a detachment cannot be performed without strict attention to the orders given, considerable readiness, and a clear and cool head.

It is possible that the seamen of the port of London are men of a superior class, and that, in the outports, the same readiness to submit to discipline might not be displayed. In this regard, local experience must be the only reliable guide. I can but speak of what has passed under my own observation.

Fourteen instructors are attached to the 'President.' Of these invaluable men, it is not possible to speak in terms exceeding their deserts. Admirably trained in their work, remarkable for their intelligence, and most judicious in maintaining their authority over the seamen of the Reserve, these instructors do the highest credit to the school of naval gunnery on board the 'Excellent,' and to the Royal Navy generally. With such men to lead, it may be confidently predicted that the Naval Reserve would be found, in a time of national emergency, an effectual safeguard for the country.

SECTION IV.

*RECRUITMENT OF THE RESERVE, AND
REGULATIONS FOR DRILL.*

RECRUITMENT OF THE RESERVE, AND REGULATIONS FOR DRILL.

If pains be taken, by means of pecuniary rewards, and in other ways, to encourage the seamen of the Reserve to learn their duty, and if the incompetent and careless are rejected, there need be no anxiety as to the general efficiency of the Reserve. The real point of difficulty lies in the recruitment for the force. The unnecessary stringency of some of the regulations, relating to the entry of seamen and their attendance at drill, caused many seamen to withdraw from the Reserve, and prevented many candidates from being enrolled, who were capable of rendering valuable service.

regulations for
the Naval
Reserve.
Age of
entry.

The regulations as to qualifications at present in force are as follows: --

- The limits of age on entry have been fixed:—

- For the Second-class Reserve, not under nineteen nor above thirty.

- For the First-class Reserve, not above thirty years of age, except in the case of men who have been discharged from the Royal Navy as able seamen with good characters; these may be enrolled in the Reserve if they are physically fit, provided they do not exceed thirty-five years of age.

Sea service.

- Every applicant for the Second-class Reserve, except apprentices as mentioned below, must prove that for three years he has followed a seafaring life either in foreign-going, coasting, fishing, or other vessels, and of these three years' service, six months' service *at least* as ordinary seamen. In the case of an apprentice who has completed his indentures for a term of not less than *three* years in any class of vessel, no further proof of service will be required. No man will be eligible for the Second-class Reserve unless he knows the compass, can steer, and is able to pull a strong oar.

- Every applicant for the First-class Reserve, except apprentices as mentioned below, must prove at least five years' sea service, within

the last ten years, and of these five years' service one year's service *at least* as able seaman in foreign-going or regular coasting vessels. In the case of an apprentice who has completed his indentures for a term of not less than *four* years, one year of which has been served in foreign-going or regular coasting vessels, no further proof of service will be required.

'Every applicant must produce certificates of good character, and must prove that he has been at sea within the four months prior to his making application for enrolment, and must declare that it is his intention to follow the sea-service for a period of at least five years.'

Promotion from Second to First Class.

Any Naval Reserve man belonging to the second class will be promoted to the First-class Reserve, provided as follows:— Promotion.

(a) That he is of good character, and is likely to continue physically fit for active service in the Fleet, and is not above thirty years of age.

(b) That he has belonged to the Second-class Reserve for a period of not less than two years.

(c) That he has served for a period of not less than twelve months as an able seaman in the British merchant service since his enrolment in the second class.

(d) That he can heave the lead, and pass a satisfactory examination as an A.B. before a naval officer.

(e) That he has made satisfactory progress and passed satisfactory examination in gunnery.

Forms of application for promotion R. V. 32 may be obtained of the Registrars of Naval Reserve.

Pensions and Provisions for Old Age.

No Second-class Naval Reserve man will, except he is wounded or injured on service or on drill, be entitled to any pension from the Naval Reserve for service in the second class only; but any Naval Reserve man who is promoted from the Second- to the First-class Reserve will be entitled to add to such time as he may serve in the first class half of the time served by him in the second class, to count towards time for a pension. Pensions.

Each First-class Naval Reserve man will, under the following conditions, be entitled to a pension of 12*l.* a year:—

(a) If the Naval Reserve man joined the Reserve when above thirty years of age, he must, in order to become entitled†

pension, have belonged to it for a period of at least fifteen years. If he joined when under thirty, he must have belonged to it for at least twenty years.

(b) Broken periods of service in the Reserve will count towards a pension in the Reserve, provided the intermediate time subsequent to enrolment in the Reserve has been served in the Royal Navy.

(c) If the Naval Reserve man has been called out by Royal Proclamation for actual service in the Navy, his time of actual service will, in the Navy, count as twice the actual period, *e.g.*, if a man has belonged to the Reserve for twelve years, and has been called out by Royal Proclamation for three out of those twelve years, his whole time will be considered as fifteen years.

(d) Subject to the conditions mentioned above, and subject also to the due performance by the Naval Reserve man of his duties as a member of the Reserve, the pension will be given to every First-class Naval Reserve man who attains the age of sixty.

(e) Subject, as aforesaid, the pension will also be given to any Naval Reserve man who previously to attaining the age of sixty years is incapacitated from earning his livelihood, provided that his incapacity is not due to his own imprudence or misconduct. Rejection by the medical officer on the ground of physical incapacity to serve in the Navy will not alone be accepted as proof of incapacity to earn a livelihood, but special evidence will be required. If a Naval Reserve man who has been pensioned on the ground of incapacity, resumes the sea service, his pension will be suspended until he attains the age of sixty.

A Naval Reserve man, whether belonging to the first or second class will, if wounded or injured on service or on drill, be entitled to the same pension to which any seaman in the Navy of the same rating would be entitled for a similar wound or injury, and if killed, slain, or drowned on service or on drill, his widow (if any) will be entitled to the same gratuities out of Greenwich Hospital Funds as the widow of any other seaman of the Navy of the same rating.

The Naval Reserve pensioners will be liable to be called on to serve in the Royal Navy, in the same manner and subject to the same conditions as other naval pensioners, but, subject to this liability, they will be allowed to follow whatever occupation they please. If they do serve in the Navy they will continue to receive their pensions as Naval Reserve men, in addition to their pay and allowances as seamen of the Fleet or petty officers as the case may be.

The qualifications insisted upon were described in more ample detail by Captain Brent in the valuable paper already referred to, 'Three Years with the Naval Reserve,' read at the United Service Institution:—

Qualifications for Naval Reserve, as defined by Captain Brent, R.N.

'The First-class Reserve man must be under thirty years of age, unless he has been in the Royal Navy, when he may be entered under thirty-five; he must produce certificates of good character, and prove that he has at least five years' sea service during the last ten years, with not less than one of these five as an able seaman. The Second-class Reserve man must be between nineteen and thirty years of age, and prove that for three years he has followed a seafaring life, of these six months as ordinary seaman. Apprentices who have completed three years of their indentures, and fishermen, can be taken for this class.

'The Registrar reads to the man the rules, explains what drill he must perform yearly and what voyages he can take; how at certain periods he can take longer voyages, provided he has done so much drill; that he must dress himself for drill in a decent suit of dark blue clothing if a first-class man, and in the uniform provided for him if a second-class man, and take care to let no small matter escape the man's attention, especially as to penalties. The man, when he perfectly understands what is required of him, signs a declaration that he is willing to serve in the Reserve for a period of five years, and is then sent with this declaration to the nearest naval officer.

'On arriving at, we will say, a drill-ship, the man is measured to see that he is of the standard height (5 ft. 4 in.), and is then medically examined—an examination, as a rule, by the Senior Staff Surgeon, and exactly the same as any man for entry into the Navy.

'Having passed the medical examination, the man is examined in seamanship, and as sometimes men are accepted who have a difficulty in proving their sea service, great care has to be taken with the First-class Reserve, that a *bonâ-fide* able seaman, one who can hand, reef, and steer, is obtained; for second class, the seamanship required is simply to steer, pull a good strong oar, and to box the compass, and there is therefore but little trouble in their examination; but the examination of the first-class men was upon the following points:—

Passing an earring
Steering with the wheel
Boxing the compass

Taking the lead
Swinging it
Marking it

Knowing the compass and working the compass tables and scales.	Having a lanyard Using a part-whale Reefing, running-rigging fore and aft.
Putting a stopper on a cable or rope.	Using a pain and needle
Strapping cables.	Working a cringle
Turning in a cable-rope.	Poling a good strong oar

Of the examination I have reported as being directly ordered, but made otherwise, to see that all seamen are entered, I adopted this form of the test; the result being, plain as is, that we have in the First-class Reserve a thorough body of sailor men. For the Second-class Reserve I imposed a very strict examination as to knowledge of the compass, the few I saw being unmistakably seafaring men; though their knowledge of the compass was one of the most limited nature, I accepted them.

Appendix
to the
Report of the
Joint Committee
on the
Naval Reserve,
1869.

It will be observed that a seaman cannot be enrolled in the Naval Reserve after he has passed the age of thirty. The Appendix to the Report of the Joint Committee, appointed by the Admiralty and the Board of Trade, to revise the regulations of the Royal Naval Reserve, contains a statement showing the ages of the seamen in the Reserve in the year 1869:

Age	No.
20 to 25	3,783
26 to 30	6,336
31 to 35	3,642
36 to 40	1,624
Above 40	677
	16,062

On a more examination of these figures it may fairly be argued that if a limit of age may be fixed for enrolment, the Reserve should be composed of the younger seamen of the merchant

service, under which men were compelled to withdraw from the service unless they continued at sea, shut out a large number of men, who were thorough seamen, and were employed as riggers or bargemen. Many of the men were still in the habit of making short voyages from port to port on our own coasts. It would be absurd to say that any men in the Reserve who were not fit to be taken into the service, in order to exclude unfit persons, it was

not necessary to frame rules so stringent as to keep out others, as to whose efficiency there could be no reasonable doubt.

The Coastguard are regarded, and most justly so, as our first and best Reserve. But a seaman in the Navy is eligible for the Coastguard after only seven years' service as an able seaman. As soon as he joins the Coastguard, his practice afloat is limited to a month's cruise, of which month, not more than a fortnight is actually passed at sea, every second year. In alternate years the Coastguardsman is sent to the Reserve ship, to which he is attached, for a month's instruction in gun-drill. All the remainder of their time is employed in patrolling the coast, and opportunity is very rarely afforded for the performance of any of the duties which properly belong to a seaman. If, with such a limited opportunity of keeping up their knowledge, the seamen in the Coastguard are found to retain their seamanship in a satisfactory manner, it is clear that men, following the occupation of riggers, who are employed in doing seamen's work all their lives, must retain, in an equal or greater degree, their former aptitude and efficiency.

Since the preceding pages were first published, revised regulations have been issued. To the First-class Reserve uniforms are issued free of charge, and a man may be re-enrolled for a third period of five years, although he may intend to reside on shore, provided he served afloat during the first and second periods of five years.

Considering the extremely liberal terms which are offered, it cannot but be a matter of surprise that a larger number of seamen do not join the Reserve. The limited number of places at which the drills are carried on, is one of the principal reasons why the number of seamen in the Reserve does not increase. The 'President' is the only drill-ship for the port of London, and this circumstance must suffice to prove how limited are the facilities afforded under the present arrangements to the large number of eligible men who reside within the metropolitan district. In order to reach the widely scattered maritime population of London, it is essential that the places of drill should be multiplied. Greenwich, Woolwich, the vicinity of the Tower, and a suitable situation on the Surrey side of the Thames, below London Bridge, may be suggested as localities in which it is most desirable to establish drilling places for the Naval Reserve.

At first the scheme for the formation of a Second-class Naval Reserve was a failure; but it was unreasonable to expect that young seamen should voluntarily submit to the irksome discipline prescribed for this branch of the Reserve. Much dissatisfaction was expressed at the regulation, compelling the Second-class Reserve to reside on b

Batteries
and drill-
ships.

Second-
class Re-
serve.

the Coastguard ships during the period of annual training. It was not easy to discover the reason why the privilege of living on shore, when undergoing their annual drill, should be accorded to the First-class and withheld from the Second-class Reserve. The rule, which compelled the men in the Second-class Reserve to go through their drills on board the Coastguard ship, caused much unnecessary inconvenience. A man residing in London, instead of being drilled on board the 'President' with the senior division of the Reserve, was compelled to go down to Harwich to drill on board the 'Penelope.' This regulation caused the majority of the men in the Second-class Reserve to be separated from their friends and families during the whole period of their annual training. There was real hardship in such a separation in the case of young seamen desiring to go through their drills, as many would do, in the short interval which they had to spend in England between two extended foreign voyages.

The regulations as to the age of entry for the Second-class Reserve were too stringent. Instead of limiting the age of admission to from eighteen to twenty, it was proposed by the Compiler that it should be from seventeen to twenty-five. The Committee of 1852 on the Manning of the Navy, recommended that the age of admission for Naval Coast Volunteers should extend from eighteen to twenty-five. In many cases the age of seventeen seemed not too young; and if a candidate were otherwise eligible, it was absurd that he should be prevented from joining the Reserve if more than twenty years of age.

These difficulties have for the most part been provided for by the new regulations, which contain many modifications, the principal of which are the following:—(a) The regulations for the second class have been framed with the view of enrolling the pick of the young men employed in fishing vessels and other seagoing craft, who, although not possessing the qualifications of able seamen, are nevertheless well adapted for service in gunboats or floating batteries, where a practical knowledge of gunnery will be of greater importance than a practical knowledge of reefing and furling square sails. (b) Instead of having only seven places round the coast where these men could be enrolled and drilled, the new arrangements provide upwards of 140 places for enrolment, and forty-four places for drill, so that men of the Second-class Reserve will be enrolled and drilled at the same places as men of the First-class Reserve. The difference, therefore, between the qualifications of the two classes will be in knowledge of seamanship only, the First-class Reserve man being an able seaman, practically acquainted with all the work on board a square-rigged ship, and the Second-class Reserve man an ordinary

seaman in a square-rigged ship, or one accustomed only to fore-and-aft vessels. The First-class Reserve man being better skilled as a seaman than the second-class man, will consequently be better paid. (c) Provision is also made for promoting men from the second class to the first class when they are qualified. (d) The standard height, which used to be 5 ft. 5 in., has been reduced to 5 ft. 4 in.; but men under the standard height will be enrolled, if specially eligible. (e) Additional facilities have been afforded for drill, and encouragement is given to Reserve men of both classes to make themselves efficient with great gun, rifle, and cutlass by additional pay and other privileges. (f) Trained men of the first class are eligible, under certain conditions, for appointment to the Coastguard; but the appointments of Reserve men to the Coastguard are not to exceed five per cent. of the total number of vacancies in the year.

It will be observed that none of these modifications involve the surrender of any important guarantee for discipline or efficiency. But it often happens that small concessions will remove objections which are strongly felt; and it was the opinion of persons, who were intimately acquainted with the habits and feelings of sailors, that, if the rules were relaxed, the strength of the Royal Naval Reserve would be rapidly increased.

Experience has shown that the removal of needless obstacles has been attended with most satisfactory results. The Second-class Reserve has been raised to 5,331 men, while the first class has been maintained at about 12,000, the average number of the last five years.

SECTION V.

*THE RECRUITMENT OF THE RESERVE
FROM THE FISHERMEN AND SEAMEN
IN THE COASTING TRADE.*

THE RECRUITMENT OF THE RESERVE FROM THE FISHERMEN AND SEAMEN IN THE COASTING TRADE.

THE enrolment of fishermen in the Reserves has been advocated by our most experienced naval reformers—by Sir Charles Napier; by Admiral Berkeley; by Sir William Hall; by Admiral Hastings; by the late Admiral Sir David Milne, and by many other most distinguished naval officers.

Manning
Committee,
1851.

In 1851, a Committee was appointed by the Admiralty, to consider the manning of the Navy, consisting of Rear-Admiral Fanshawe, and Captains the Hon. R. Dundas, Peter Richards, and Sheppard. They reported that a coast militia was a highly desirable force, and recommended that 5,000 or 6,000 men should be raised for the Coast-guard. In some parts they anticipated that there would be a greater disposition to enrol than in others. It was not, however, essential that the numbers in each district should be equal. They recommended that the age of admission should be from eighteen to thirty-five, and that the men should be chiefly trained in the use of the great guns, under the superintendence of the Coastguard, at the seasons of the year which would least interfere with their occupations as fishermen.

The Committee adverted to the large number of excellent seamen who could be obtained in Scotland, and to the general ignorance of the advantages offered by the Royal Navy existing in that country, and they recommended that a Scotch naval station should be established. Something has already been done in this direction. First Reserve ships are stationed in the Clyde and at Queensferry. It would be desirable to add two or three vessels, more adapted for cruising round the Scotch coasts, and visiting many of the smaller ports and more remote fishing stations. Indeed, it might have been expected that the supervision of our naval defences would have been considered a task quite important enough to justify the appointment of an

Admiral to the command of the Scotch station, as there now is an Admiral in command of the Irish station at Queenstown. Such was the opinion of Admiral Sir R. Dundas, and it was confirmed by similar testimony from Sir Alexander Milne, Commander Eden, and Sir James Graham.

The physical power and hardy qualities of the Scotch fishermen must be seen to be appreciated. Admiral Sir Reginald MacDonald, when commanding a Coastguard ship on the Clyde, enrolled in a few weeks 600 men in the Coast Volunteers. They averaged one inch taller and two inches more in girth round the chest, than the Marines on board his ship, although the latter were a remarkably fine body of men.

Qualifica-
tions of
fishermen.

Our fishermen possess all the qualifications proposed for the Second Class Reserve. 'They can steer; box the compass; heave the lead; and pull a strong oar.' They have been from their boyhood on the water, and they are more robust, and better prepared to encounter the hardships of the sea than the regular seamen of the Navy, trained in far greater luxury, and whose regular course of duty does not involve the same constant exposure to bad weather in small craft in the winter season.

The local knowledge of the fishermen is another important qualification. Our regular men-of-war's men and the seamen of our mercantile marine being chiefly employed on foreign service, it is impossible to over-estimate the advantage of having a body of men in our Reserve who possess an intimate acquaintance with the intricate navigation of our own coasts.

The fishermen employed in their daily avocation upon our own coasts will contribute to the service of the Navy an intimate knowledge of an intricate navigation, with which from long habit they have become familiar, but which the officers and men brought up in the Navy, and chiefly employed on foreign stations, have few opportunities of studying. Those naval officers, few in number, who are acquainted with the navigation among the sandbanks extending along the eastern coast of England, from the South Foreland to the north of the Humber, can appreciate the immense importance of manning for a Coast Defence Flotilla with seamen possessing a local knowledge of that coast.

The fishermen never sail under a foreign flag. They have fixed places of residence, can always be found when their services are required, and their moral character is in the highest degree meritorious. Referring to the men to be obtained on the coast of Essex, and of whose qualifications and conduct I have had the best opportu-

nities of judging, I cannot speak too highly in their praise. The fishermen in my employ, exposed, when serving in a yacht, and under a lax discipline, to the temptations of foreign ports, have ever shown themselves superior to all the enticements of the shore, and have regularly remitted to their families more than two-thirds of their earnings. The result is happily manifested in the comfort of their village homes, which are all that the philanthropist could desire. The short and simple annals of the poor contain no more creditable or reassuring tale than the story of these, my humble but beloved companions on many a pleasant cruise—pleasant, because of their good conduct and faithful discharge of every duty.

To some it may appear doubtful whether all the dash and *elan* required for naval operations is to be found among the stay-at-home people, who earn a livelihood in our fisheries. Had they seen, what the Author has often witnessed, the agility, the seamanlike resource, and the nerve, which these men never fail to display in the ever-varying incident and adventure of sea-life, they would no longer doubt their aptitude, if properly trained, for every duty which the crews of our Coast Flotilla may be called upon to perform.

captain
gardner,
N.

The attempt to form a Second Class Reserve was a failure at the outset, because the fishermen were ineligible, and the only seamen who could join the force belonged to the same class from which the Royal Naval Reserve was recruited, the only difference lying in the degree of seamanlike experience and skill required. Captain Gardner pointed out that the obligation to drill for twenty-eight consecutive days on board the Reserve ships, if too onerous for the Royal Naval Reserve, would be equally hard to the men of the Second Class Reserve, who belonged to the same class, made the same foreign and coasting voyages, and had no more opportunity of spending time on shore with their friends.

It was stated by Captain Gardner, in a paper read before the United Service Institution, that owing to the stringency of the regulations as to height, physique, age, character, and qualifications as seamen, there could be few remaining in the merchant service available for the First Class Naval Reserve; but that there were thousands of seamen well qualified for the Second Class Reserve.

captain
gardner,
N.

If it was intended that the Second Class Reserve should be formed as a substitute for the Royal Coast Volunteers, the qualifications required in candidates for admission into the force were unnecessary. The original idea was that all the fishermen or boatmen should be eligible for the Coast Volunteers; but, under the regulations for the entry of the men into the Second Class Reserve, a knowledge of

seamanship as practised in square-rigged vessels is insisted upon, and thus our long-shore population whose services in gunboats would be invaluable were excluded from our sea militia.

The fishing population is regarded by French naval authorities as an invaluable and essential element in their Navy, and it may be observed that it is the only branch of the French mercantile marine which has of late exhibited any tendency to increase.

French
fisheries.

In a pamphlet on the condition of the French Navy in 1865, Prince de Joinville observed:—‘La seule branche de notre navigation qui ne dépérísse pas en ce moment est la pêche. Celle qui se fait sur le littoral voit les chemins de fer assurer un débouché et une plus grande valeur à ses produits par le transport rapide du poisson. Quant à la grande pêche, celle qui arme pour l’Islande et Terre-Neuve, elle se maintient, grâce aux avantages protecteurs dont elle jouit encore. Grande et petite pêche font donc aujourd’hui l’emploi de la majeure partie de notre personnel naval, à la différence de ce qui se passe chez les autres peuples marins, où elles ne sont qu’un accessoire.’

Prince de
Joinville.

The Royal Commission of 1859, confirming the high estimate which had been formed of our fishing population by the Committee of 1852, advised that the force should be raised to 10,000 men, and recommended that the Royal Naval Reserve should be divided into two divisions, the first consisting of able seamen from the merchant service and school-ships, and the second division recruited from the resident seafaring population; in other words, the fishermen and seamen employed in the coasting trade. It was contemplated that the second division would absorb the Royal Naval Coast Volunteers.

Commis-
sion 1859.

About the same date a very similar plan was put forward in France. It is thus described by Baron Grivel in *La Guerre Maritime*:—

‘Frappé de ces considérations, l’amiral Hamelin, ministre de la marine, assembla, en 1859, sous la présidence du vice-amiral de Tinan, une commission qui élabora un projet d’institution des marins gardes-côtes.—Il ne nous appartient pas d’entrer dans des détails qui n’ont pas été rendus publics, ni de chercher à pénétrer les causes et la résistance qui vinrent paralyser cette patriotique pensée; mais, en remontant aux anciennes ordonnances pour y puiser plus d’une pensée utile, voici comment on pourrait esquisser les traits saillants de la nouvelle institution :

Baron
Grivel.

‘Recrutement des canonniers gardes-côtes parmi les marins classés de plus de quarante ans, laissés dans leurs foyers, en vertu de la levée permanente.—Cadre de paix comprenant les gens de mer à industries sédentaires ou périodiques, tels que les “pêcheurs et les petits cabo-

teurs," réunis pendant la morte saison des pêches, pour des exercices annuels.—Cadre de guerre s'élargissant pour recevoir "les *longs-courriers* et les *grands-caboteurs*."—Rassemblement annuel des compagnies de canonniers-marins pendant quinze jours aux batteries désignées des postes et quartiers, en échange d'une indemnité de présence.—Instruction dirigée par des officiers de marine assistés de sous-officiers et canonniers brevetés.—Transport annuel du personnel d'instruction par les trois divisions de gardes-pêches des côtes de France.—Exercices variés, tir du canon de côte à boulets, sur des buts flottants mouillés au large; tir du fusil Chassepot, arme portative des canonniers-marins gardes-côtes; mouillage et enlèvement des torpilles; installation, mise en place des estacades et obstructions destinées à barrer les passes des ports et les entrées des rivières.—Pour plus de simplicité, en temps de paix, ce service serait dirigé et inspecté par les trois capitaines de vaisseau commandant les divisions du littoral.—Les marins seraient admis à compter le temps passé au service des côtes comme temps de service à l'État.—Pour 8,000 marins des côtes qui, avec 5,000 douaniers, formeraient le cadre de paix, la dépense se bornerait à 480,000 francs d'indemnité de présence. Tout au plus, en temps de *paix*, cette dépense atteindrait-elle *un million*, en comprenant les poudres et les projectiles d'exercice.'

It is the more desirable to enrol fishermen in the Reserves because, during the intervals of enforced idleness in the fisheries, they can attend the necessary drills without inconvenience. At Hastings additional hands are always employed in the herring and mackerel season, from April till November. During the trawling season not much more than half the number are employed at sea. Those who remain at home, if fortunate enough to be the owners of boats, are occupied in mending their nets, but a large proportion of the remaining hands are dependent on parish relief. At such a time, the opportunity of earning a moderate rate of remuneration for attendance at gun-drill should be eagerly sought by the unemployed fishermen.

mittee
oard
dmi.
, 1861.

The general idea, which the promoters of the Coast Volunteers had in view, was clearly described by Lord Halifax in his evidence before the Select Committee on the Board of Admiralty in 1861. 'It was,' he said, 'intended to carry out more fully the step which had been taken by Sir James Graham in forming the Naval Coast Volunteers. They were attached to the Coastguard ships in divisions as far as they could be, and that measure had very great success. I inspected several ships' companies in 1857, and March 1858, and their numbers were as follow: There were 5,776 enrolled—4,448

trained, 441 under training, and 61 had volunteered for the Navy. I think that justice has never been done to the Naval Coast Volunteers. They have been objected to on the ground that they would not go for foreign service. It was never intended that they should do so. The object of forming that body was to provide for the defence of the coast, in case of need, in such vessels as could be employed along the coast. If they were men habitually going on foreign voyages you could not depend upon finding them when you wanted them. The object, of course, was to have men with a certain acquaintance with naval matters, used to boats and small vessels, and whom you could at any time lay hands upon and put on board gunboats, and vessels of that description, at the different ports. The general scheme was, that there should be attached to all the Coastguard ships a small flotilla of gunboats, to be manned by the Naval Coast Volunteers. It so happened that we were removed from office before we had time to carry it out; but I believe it would have afforded a very efficient defence all round the coasts of this country. I do not see why the Naval Coast Volunteers should not have been carried to many thousand men. I believe they might have been carried to 20,000 or 30,000 men, all round the country. I believe that they may be still carried to that extent, if properly managed and encouraged by the Coastguard officers in the different districts.'

The most desirable men for the Coast Defence Sea Militia are to be obtained at Penzance, Brixham, Brighton, Hastings, Folkestone, Deal, Barking, Colchester, Lowestoft, Yarmouth, Cromer, Berwick, Dunbar, Newhaven, Anstruther, Aberdeen, Peterhead, Cromarty, Wick, Shetland, Orkney, and the western islands of Scotland.

Chief
fishery
harbour.

Our seafaring population at first regarded with wonted suspicion the invitation to join the Reserves. Their prejudices have been overcome by kind treatment. Many, who were anxious to join the Reserves, were excluded by their want of experience in square-rigged vessels. To reject these men altogether, when our gunboat flotilla and our mastless turret-ships will require large numbers of men trained to gunnery and accustomed to the sea, but in which agility aloft can never be required, was a policy so blind and prejudiced, that it is difficult to understand how it could ever have received the sanction of our naval authorities.

Eligibility
of fisher-
men for
Reserve.

The rules for admission into the Coast Volunteers, with the recent modifications, are so framed as to require only such seamanship as every experienced fisherman must possess. Training in gunnery and small-arm drill are the only additional qualifications needed, to make our fishermen thoroughly useful in the Coast Defence Flotilla.

Officers for
Coast De-
fence Re-
serve.

Officers should be selected to command the Coast Defence Reserve who have exhibited special aptitude for that branch of the service. They should reside at the principal fishing ports, and be permanently attached to the Coast Defence Service. By these means they would have the inestimable advantage of being personally acquainted with the men under their command.

In his evidence on the manning of the Navy in 1852, Admiral Berkeley insisted that special care should be taken in the selection of officers for the Coast Defence Service. It was essential that all the officers, and particularly the commanding officer, should be accustomed to the fishermen and they to him. In addition to the proposed drills in gunnery, and the use of small arms, officers and men should make themselves locally acquainted with the channels and entrances to the harbours in their respective districts, and be instructed in the use of the torpedo, and its application to coast defence.

SECTION VI.

*REGULATIONS FOR THE ENROLMENT OF
BOYS IN THE THIRD-CLASS ROYAL
NAVAL RESERVE.*

LETTER

ADDRESSED TO THE COMPILER IN 1879 BY CAPTAIN BOURCHIER, R.N.,
SUPERINTENDENT OF THE 'EXMOUTH.'

REGULATIONS FOR THE ENROLMENT OF BOYS IN THE THIRD-CLASS ROYAL NAVAL RESERVE.

Regulations
for
Third Class
Reserve.

THE following Regulations have been recently issued for the enrolment of a Third-class Reserve :—

Conditions of Admission to the Third-Class Royal Naval Reserve.

‘ The Lords Commissioners of the Admiralty are prepared to grant to the committee of management of a mercantile training ship the sum of three pounds for every boy trained thereon who joins the third class of the Royal Naval Reserve. The conditions are as follows :—

‘ Boys on joining a ship for sea-service will be eligible for enrolment in the Third-class Royal Naval Reserve who fulfil the under-mentioned conditions, viz. :—

‘ 1. They must have been for $1\frac{1}{2}$ years under training on board a training ship, and subject to inspection by officers appointed by the Admiralty and the Board of Trade. They must also be under engagement to serve in a merchant ship at sea.

‘ 2. They must be 16 years of age, not less than 5 ft. 1 in. in height, and 30 in. chest measurement ; of robust frame, intelligent, sound and healthy constitution, free from physical defects or malformations, and not subject to fits.

‘ 3. They must be able to read and write, and show satisfactory proficiency in cutlass, small-arm, and gunnery drill, as well as in elementary subjects connected with navigation and seamanship, such as log, lead, compass, rowing, swimming, reefing and furling sails, steering, knotting, splicing, stropping, and rule of the road, and produce a certificate of good character from the captain of the training ship.

‘ 4. When enrolled they will be supplied annually with a suit of uniform clothing, consisting of a blue serge frock, a pair of blue cloth

trowsers, and a cap, of the value of 1*l.* 10*s.*, and receive while under training the same pay as Boys First Class, viz., 7*d.* a day, and the same allowances per day for subsistence as members of the Second-class Reserve, with travelling passes to and from drill.

‘5. They must sign an engagement to serve for four years from the age of 19, and will be required to undergo in each year while in the Third-class Reserve 28 days’ drill on board a drill ship or at a Naval Reserve battery, and be subject to discipline, and liable to serve in the same manner and to the same extent as members of the Second and First-class Reserve.

‘6. They will on attaining the age of 19 years, provided they have SERVED SIX MONTHS at sea, be transferred to the Second-class Reserve and afterwards promoted to the First-class Reserve, if in all respects qualified.

‘7. The service of boys in the Third-class Reserve, who pass from it through the second into the first class, will count at the rate of three years’ service for one year’s time towards pension, provided they comply with the regulations as to drill and reporting their whereabouts.

‘8. The usual form of enrolment will have to be obtained of a Registrar of Naval Reserve, and filled up by the boy, and on the enrolment being completed the sum of three pounds (3*l.*) will be paid to the committee of the training ship.

‘9. These regulations do not apply to boys brought up in reformatory ships.’

It may be interesting to compare the regulations established for the admission of boys into the Navy with those authorised for the Third-class Reserve.

Rules for
admission
of boys
into Navy
and Third-
class Re-
serve.

‘Boys for the Navy must be over 15

and not above 16½ years of age,

- | | | | | |
|---|---|--|---|----------------|
| A | { | over 4 feet 10½ inches high, from 15 to 15½ years of age, to measure not less than 29 inches round the chest, | } | without shoes. |
| B | { | over 4 feet 11½ inches high, from 15½ to 16 years of age, to measure not less than 29½ inches round the chest. | } | |
| | | over 5 feet 1 inch high, from 16 to 16½ years of age, to measure not less than 30 inches round the chest, | | |
- able to read and write fairly,
strong, healthy, well-grown, active, and intelligent,

free from all physical malformation,
must be able to pass a strict medical examination by the
surgeons of the ship,
must never have had fits.

They must have the written consent of parents or nearest relations, and must produce a certificate of birth from the Registrar of the district in which they were born, or a declaration made by one of their parents before a magistrate, of the day on which they were born.'

Amend-
ment in
rules for
Third
Class.

In a letter to the Compiler of November 25, 1879, Captain Bouchier suggested for consideration several modifications in the regulations for the enrolment of the Third-class Reserve:—

'The age for enrolment in the Third-class Royal Naval Reserve is 16 years and upwards, height 5 ft. 1 in., chest measurement 30 in., and time served in training ship eighteen months.

'This age is too great, and the standard for height and chest too high, for us to pass but a very small number indeed into the Reserve.

'In this ship, and I believe in all other mercantile training ships, the boys are supposed to be off the hands of the ratepayers, or the charitable, at the age of 16 years. This regulation, if observed strictly, at once cuts us entirely off from the Reserve. Before reaching the age of 16 years well-trained and well-grown lads are in every way able to earn their own living at sea, and do so. The boys therefore go to sea in large numbers without even having had a chance of being enrolled in the Reserve, although the Admiralty pay a Gunnery Instructor to teach them, and provide guns, rifles, and cutlasses to this and other ships for that purpose.

'The following is really what is required in order that suitable and well-trained boys may be enrolled in the Third-class Royal Naval Reserve.

'Time served in a mercantile training ship 18 months as hitherto. That the age for entry should be 15 to 15½ years, as for the boys entered for the Royal Navy according to note A in enclosed circular. At that age the height should be 4 ft. 10½ in., and girth of chest not less than 29 in. (See Queen's Regulations and Admiralty Instructions February 1879, page 96, chap. VIII.) This is the standard as used at that age in the Royal Navy until a recent period. For boys of a greater age than 15½, the standard might of course be higher, but somewhat less than that specified in the paragraph referred to, for the Royal Navy. (See note B in enclosed circular.)

‘I submit that if the regulations for the enrolment of the Third-class Royal Naval Reserve were modified as above, it would admit of the entry of the finest of our well-drilled and well-trained sailor boys, and that we should in time go far to improve the Mercantile Marine in the same manner as the Royal Navy has in late years been so much improved. The training of very large numbers of boys would be utilised by the State when the boys became men, through their being under the obligation to continue at sea for some years.’

SECTION VII.

*THE ROYAL NAVAL ARTILLERY
VOLUNTEERS.*

THE ROYAL NAVAL ARTILLERY VOLUNTEERS.

A.

Proposal
to establish
Naval
Volunteers.

IN addition to the various corps or descriptions of force, already enumerated, there are indications that the spirit of the Volunteer movement, which has shown so much unanticipated vitality, will be exhibited on the sea as well as on the land. In 1872 a scheme was laid before the present writer for the formation of a corps of Naval Volunteers. The gentlemen by whom the movement was initiated were accustomed to yachting and boating, and fond of the sea. They offered to go through a course of gun drill, and, in addition, to serve afloat for 14 or 21 days every year, in a gunboat, if such a vessel could be supplied for their instruction. The proposal as brought forward by the late lamented Mr. Boon, the senior executive officer of the London Brigade of Royal Naval Artillery Volunteers, seemed to contain the germs of a movement, which might in the end prove extremely important, and which appeared, to judge by his recent speech at Liverpool, to command the sympathies of Mr. Goschen.

Arrange-
ments for
drill.

The scheme was gradually matured, and much consideration was required in working out the details. The preliminary gun drills for Naval Volunteers were carried on without serious inconvenience, and without any addition to the public charge, on board the drill ships of the Royal Naval Reserve. Distinct hours were set apart for the drill in the afternoon, in the summer months, after the seamen of the Royal Naval Reserve had completed their daily task. It was stipulated that a full gun's crew of Volunteers should attend; otherwise the drill did not take place. When a number of Volunteers, sufficient to form a crew for a gunboat, had been passed as efficient in gun drill, had proved their ability to pull a strong oar, and been instructed in small-arm and company drill, it was arranged that they should be formed into a distinct corps. A gunboat was to be fitted out, and stationed in the port to which the corps belonged, in charge of a commissioned officer, or in some cases a gunner of the Royal

Navy, with a small staff of petty officers, and a detachment of marines. To this gunboat it was proposed that the corps should be attached, and the drills thenceforward conducted on board. In the summer the gunboat was to be sent to sea manned by crews of Volunteers. They were to be required to pay their own expenses of uniform and messing, and to perform, when embarked, all the duties of the vessel as seamen before the mast. A portion of the expense of the permanent staff of the gunboat was to have been defrayed by subscriptions among the members of the corps and their friends.

The possibility of training Volunteers to the use of the great guns afloat was established with little delay. A hundred gentlemen were provisionally enrolled in a corps, which formed the London contingent of the force now officially designated as the Royal Naval Artillery Volunteers. By permission of the Admiralty, the members of the London contingent were allowed to drill on board H.M.S. 'President,' the drill ship of the Naval Reserve, in the West India Docks. Being engaged in other occupations throughout the day, the drill took place twice a week in the evening. These drills commenced in October, 1872; and those members of the force who joined at that date, and who had attended most regularly, had, previous to the first unofficial inspection by Admiral Tarleton, exactly the equivalent of seven days' drill in the Naval Reserve. The instruction thus received was necessarily incomplete, and from the impossibility of assembling the Volunteers in daylight, it had been imparted under the most unfavourable circumstances. Yet, in spite of every disadvantage, Admiral Tarleton expressed the greatest satisfaction at the progress which had been made. In his address to the Volunteers, he rightly attributed their rapid advance, in the very limited time, to their superior intelligence and education, and the interest which they had felt in their work. It would be unjust not to attribute the proficiency attained, in an equal degree, to the care, the patience, and the zeal displayed by the instructors attached to H.M.S. 'President.' From the gunner downwards, all had been unwearied in their efforts to train the new recruits for the Navy. The instructors had shown remarkable tact in uniting the deference due to the members of a force so peculiarly constituted, with the necessary strictness and authority in enforcing attention to the drill.

In the then provisional constitution of the force, great personal inconveniences had been suffered, which were easily obviated when permanent arrangements were made. The 'President' being moored in the West India Docks, the Volunteers had been compelled to perform a tedious and uncomfortable journey, occupying, in goi

and returning to the ship, a period of two hours, in addition to the time actually spent at drill. When permanent arrangements were made, it was proposed that the drills should take place, either in a battery fitted up at Somerset House, or on board a gunboat appropriated to the Volunteers, which might be regarded as the headquarters or miniature receiving ship of the Volunteer Naval Service. If an old harbour ship were selected, it was thought that the most convenient place for her moorings would be in a situation adjacent to the Thames Embankment, and therefore easily accessible. A berth opposite Somerset House, near the Thames police hulk 'Royalist,' seemed the best that could be chosen.

Liverpool
corps.

As regards facilities for drill, the Liverpool contingent had at least as much difficulty to encounter as their London brethren. The 'Eagle,' the drill ship of the Naval Reserve of the port of Liverpool, was at that date moored on the Cheshire side of the Mersey. To cross the river occupies a quarter of an hour, and the Volunteers had to march a mile through a lonely and miserable part of Birkenhead, in order to reach the drill ship. It was proposed that a 6½-ton gun should be placed in a battery at the St. George's pier head, constructed to represent the section of a ship, or that a gunboat should be moored in one of the Liverpool docks, in a central position. The Volunteers would thus be enabled to learn their work, without being exposed to the unnecessary inconvenience to which they were subjected when first enrolled.

Arrange-
ments for
the com-
mand of
Volunteers.

For the command of the Volunteer force it was thought that it would be a great advantage, if an officer were permanently appointed to the gunboat in which the Volunteers were instructed. It appeared to be almost impossible to find Volunteers to act as officers of the new branch of the Naval Reserve. Few amateurs have the necessary nautical experience, or leisure to devote to the duties of such a command.

The Naval Reserve has suffered much from the omission to appoint naval officers to the command. It seemed probable that the Reserve of Volunteers would equally suffer, unless the force were placed under the supervision of a naval officer. Continuous attention is required to ensure that the drills are properly carried out, to keep the instructors to their duty, and the Volunteers in a proper state of discipline when attending drill. The work of recruiting for the force might be immensely advanced by an energetic and judicious naval officer, who knew how to meet the many difficulties incidental to a naval experiment, and whose personal influence might contribute immeasurably to the popularity of the force.

The first unofficial inspection of the London contingent of the Naval Volunteers having attracted the attention of the public in some degree to the movement, as an interesting and promising experiment, inquiries were addressed to the author from various influential gentlemen, resident in, or connected with, other ports asking for information as to the constitution and regulations of the pioneer contingent in London. It was impossible to afford the necessary assistance or encouragement to the gentlemen who had evinced their willingness to take an initiative in this important movement in their several localities without a voluminous correspondence, or the far more effectual means of personal communication. But to visit all the ports, where there was a reasonable prospect of successfully fostering the movement, was a task beyond the compass of any individual who had other important and engrossing pursuits. It was therefore absolutely essential to the success of the movement, which Mr. Goschen had himself initiated, that a naval officer, of the rank of commander or captain, should be attached to the staff at Whitehall, whose duty it should be to superintend the drill and discipline of the London contingent, to acquaint himself with their constitution and regulations, to inspect from time to time the contingents at other ports, and to make representations to the Admiralty as to any improved arrangements which might be found practicable for carrying on the drills. It was obvious that it would be another and a most important branch of such an officer's duty to visit the ports from which well-authenticated communications were received from gentlemen who were willing to co-operate in raising a contingent of Volunteers. The visit of a judicious officer, in answer to such communications, would often secure the formation of a contingent in a case in which, without such encouragement and assistance, the task would be abandoned.

Appoint-
ment of
Captain
Codring-
ton, R.N.

There had been no hesitation at the War Office to appoint a numerous staff of inspectors and adjutants to the various corps of land Volunteers. There could be no just reason why hesitation should be felt in consenting to some expenditure, trifling in comparison with the object in view, for the purpose of securing the utmost efficiency in the various branches of our Naval Reserves.

The Volunteers had passed through their first ordeal successfully. They had been inspected at quarters, and had gone through the small-arm and cutlass drill to the complete satisfaction of the distinguished admiral by whom they had been inspected. But a further and much more difficult experiment was still to be tried, ere it could be affirmed, with any reasonable confidence, that the work which the Royal

Naval Artillery Volunteers were ambitious to undertake ~~was practicable~~ for those who were not by profession sailors. These representations were appreciated at the Admiralty, and Captain Codrington, to whom the Royal Naval Artillery Volunteers are so much indebted, was appointed to superintend the first organisation of the force.

Difficulties
and objec-
tions.

Persons who questioned the possibility of supplementing our Naval Reserves with a corps of Volunteers might fairly insist on the difference between gun drill on board a stationary vessel, moored in a canal, and the practical working of naval guns of large calibre in a gunboat in a sea way. It would have been presumptuous to refuse to admit the force of these objections, until, by actual trial afloat, the capability of the Volunteers had been tested. The seamen of the Royal Navy would supply the necessary knowledge of seamanship, and lead the way; but the Volunteers would have to perform all the manual labour. Decks must be scrubbed down every morning, hammocks stowed, brass-work and gun-carriages cleaned. Some of the work they would have to do was laborious, and much of their duty would be of a kind never before undertaken by educated landmen.

In the face of these admitted difficulties, the sanguine promoters of the Volunteer movement believed that if it were well directed numbers would not be wanting. The London contingent was composed of gentlemen commencing a commercial career, in salaried positions in the banks, the insurance offices, and in private firms. A valuable nucleus had already been formed in the Post Office. These gentlemen were all addicted to boating, and fond of athletic exercises. It was obvious that the stratum of society to which the recruits already obtained belonged was very large. It embraced the entire middle-class of England; the backbone of the country. The expense of membership was not beyond the reach of young men of moderate means. The uniform cost 5*l.*, the subscriptions were half-a-guinea for entrance money, and a guinea for the annual subscription. On the other hand, these items were beyond the reach of the labourer or the artisan. In short, it might be said that the personal constitution of the contingent faithfully represented the original conception of the land service Volunteer.

Letter to
Mr. Gos-
chen.

The first conceptions of the pioneers of the Naval Volunteer movement were presented to Mr. Goschen in the following letter:—

‘24 Park Lane, W.: June 27, 1873.

‘Dear Mr. Goschen,—Herewith I enclose a memorandum containing the regulations proposed by Captain Codrington for the

acceptance of the Naval Volunteers, together with their amendments and my own observations.

‘As a Member of Parliament, I am perhaps biassed in favour of official views, and, throughout the discussion to which the memorandum relates, you will observe that in the main I lean rather to the Admiralty than to the Volunteer opinion.

‘By communicating personally with the Naval Volunteers in London, Liverpool, and other places, Captain Codrington will have done much to facilitate a decision as to the most satisfactory plan of organisation of the Volunteers. It was essential to know the opinions entertained by those who had taken an active part in initiating the movement in the various ports. But, having ascertained the views of the Volunteers, the Admiralty must now decide for themselves what the organisation of the force ought to be, and they should prepare a Bill for the approval of Parliament in conformity with their own conclusions. It is impossible to satisfy everybody. The most enthusiastic persons are often the most crotchety. You will never arrive at a decision if your plans are to await the approval of all the various corps of Volunteers, before they are finally adopted at headquarters. I therefore venture to advise that you draw up your own scheme for embodiment in an Act of Parliament, and that you then say to the Volunteers: “These are the conditions we insist upon. If you will accept them we will most gladly avail ourselves of your services, but if you cannot fulfil our requirements we must decline to receive you into the Navy.” To the Volunteers I have said: “Do not ask the Admiralty to bind themselves by Act of Parliament to conditions which may be found by experience to detract materially from the value of your services. On the other hand, do not bind yourselves to a long period of service in time of peace. Thus you will have it in your power, if the regulations are unreasonable, to withdraw whenever you please, from an irksome and disagreeable service.”

‘Plenary powers for the Admiralty to make rules, and, for the Volunteers, the right to quit the service on short notice, are the points upon which, as it appears to me, the two parties to the negotiation may fairly insist. These conditions being accepted, I can see no difficulty in preparing a suitable scheme of organisation. What is the basis upon which the plan should be constructed? What kind of service do the Volunteers offer to perform for the country? They are prepared to act as Naval Artillerymen on board gunboats and vessels adapted for coast defence in the time of war. All necessary means for instructing them in their duties must be provided; and, as a Naval Artilleryman will be much more efficient if he has some

knowledge of the duties of a sailor, and as target practice afloat is absolutely essential, it must be desirable that the Volunteers should embark at frequent intervals in a gunboat; and a cruise of seven days' duration every year will doubtless tend materially to their general efficiency.

'In these opportunities of going afloat, which are an essential part of their training, you have the means of encouraging large numbers of men who have a passion for the sea, to join the Naval Volunteers.

'Provided that the regulations are satisfactory on this important point of occasional service afloat, I am satisfied that the majority of the Volunteers will be ready to accept the terms on which the Admiralty may find it necessary to insist.

'In the appointment of officers, the Admiralty must have full discretion. It would obviously be their desire to make a good selection; for it is clear that the appointment of an unpopular officer would lead to the rapid withdrawal of members from the corps with which he might be connected. I will not, in this letter, enter upon the subordinate point of uniform, as to which I have made a suggestion in the accompanying memorandum.

'Lastly, as to discipline. The provisions of the Act under which the land Volunteers are embodied will doubtless be taken as a precedent, and it will be the duty of the Admiralty to lay down, and the Volunteers must cheerfully accept, whatever modifications may be required in order to meet the peculiar exigencies of the sea service.

'I venture, in conclusion, to express the hope that there may be no further delay in preparing a short Act, authorising the Admiralty to enrol a force of Naval Volunteers, and to issue, from time to time, such regulations as may be necessary to ensure the discipline and efficiency of the Naval Volunteer force.

'I am, dear Mr. Goschen, yours faithfully,

'THOMAS BRASSEY.

'Right Hon. G. J. Goschen, M.P.'

After careful consideration, the Admiralty determined to accept the proposals which had been submitted to them, and an Act was passed, authorising enrolment of the new contingent of the Reserve forces.

The possibility of training landmen to work heavy guns afloat had been recently proved by a successful experiment, which had been carried out by the Canadian Government on the vast inland seas within the limits of the Dominion. In the drill season of 1871-72, three

batteries of garrison artillery, forming part of the militia of the province of Ontario, embarked in succession on board the gunboat 'Prince Alfred' for eight days, and were practised at gun drill and in firing shot and shell. The vessel, while the Volunteers were on board, cruised on Lakes Erie and Huron. From personal inquiries addressed, during a visit to Canada, to the commander of the gunboat, the compiler was satisfied that a satisfactory degree of proficiency was reached by the volunteers. The batteries consisted of two officers and forty-eight men, two officers and twenty-five men, and three officers and thirty-eight men, respectively. While embarked, each battery of the Volunteers was exercised twice at target practice, and once at night quarters. The 'Prince Alfred' was armed with two Armstrong and four brass howitzer guns. While the militia were assembled in the camp of instruction, on the 'Goderich,' the gunboat took part in the operations. On one occasion, when the Volunteers were embarked, they were inspected by Sir Hastings Doyle.

No unforeseen difficulties have arisen in carrying out a proposal essentially tentative and experimental. The Volunteers have not found life at sea too severe an ordeal; and the experiment deserves patient trial. If only 1,000 Volunteers can be found willing to give their unpaid services to their country, their patriotism deserves recognition, and they will have the proud satisfaction of knowing that they may be enabled to set a high example in a good cause to many who may hereafter follow.

There is nothing new in the idea of Volunteer artillery for coast defence afloat; but to my friend Colonel E. Vernon Harcourt, commanding the Cinque Ports Volunteer Artillery Brigade, the credit peculiarly belongs of having endeavoured to develop a force of that description in connection with the Volunteer movement, of which he was one of the earliest promoters. In 1860, Colonel Harcourt had an interview with Lord Clarence Paget on the subject, and in 1861 he addressed a letter to the Admiralty, informing their Lordships that he had enrolled 70 sailors and seafaring men at Hastings, and had regularly drilled them at garrison guns. He asked that, in addition to the ordinary means of instruction on shore, the men should be embarked on a gunboat or other vessel of war, which should be allowed to touch at Hastings in the summer for that purpose. The request was refused by the Admiralty. In answer to a question put by Mr. North, my late respected colleague in the representation of Hastings, Lord Clarence Paget said that the expense was the sole reason why the Admiralty could not comply with the request which had been made for the temporary loan of a gunboat. The subject

Cinque
Ports Ar-
tillery.
Colonel
Harcourt.

was taken up by the press, and the Marine Volunteers found many warm and influential advocates. The *Times*, the *Daily Telegraph*, and other leading journals, severely criticised the ill-timed parsimony of the Government. It was very properly observed that, when the Admiralty were going to ask the country for 13,000,000*l.*, it was idle to pretend that they could not afford a gunboat for Volunteer practice. It was urged that it was just as reasonable that men should offer their services as Volunteers for the Marine Artillery without wishing to enter the Navy, as that volunteer riflemen should be willing to be drilled, and to serve in the event of invasion, without wishing to enter the Army. Boatmen, who would feel out of their element in a large square-rigged ship, would be invaluable in a gunboat. But if they were to enter for general service in the Navy, they might find themselves exposed to much annoyance from being sent to sea in a vessel to which they were not accustomed. In the debates which followed the speech of Lord Clarence Paget in moving the naval estimates, in 1861, Mr. Bentinck pleaded that every encouragement should be given to the Volunteers, on whose behalf Colonel Harcourt had applied for the gunboat at Hastings. Sir James Elphinstone recommended that the aid of the gentry should be invoked, who might, by their influence, form a body of Volunteers from among the 300,000 fishermen, bargemen, boatmen, and others, included under the general term of aquatics, who would be willing to practise gunnery in gunboats or gunvessels, and, in case of need, materially strengthen our naval forces. Mr. Lindsay, in commenting, in the same debate, on the condition of the Naval Reserve, expressed his regret that a slap in the face had been given to those men who had been willing to incur the expense and trouble of being drilled into a Volunteer corps. Mr. Laird also, in a letter addressed to the *Times*, had urged that the Government might efficiently and economically man vessels for local coast defence, by accepting the services of flatmen, boatmen, and others; a class of men who would not volunteer for service abroad in Her Majesty's Navy. The pressure thus brought to bear on the Admiralty, both in Parliament and the press, was not without effect. It was shortly afterwards announced in the House of Commons by Lord Clarence Paget that as soon as the Volunteers had learned their drill at batteries on shore, at the Coastguard stations, the Admiralty would consider to what extent gunboats might be appropriated for the purpose of embarking them, and giving them their sea legs. Nothing, however, was ever done in fulfilment of this pledge, and the corps with which I have the honour of being connected is the first which has had any encouragement from the Admiralty.

B.

THE Admiralty having obtained authority from Parliament, under an Act passed in 1873, to organise and enrol a force of Royal Naval Artillery Volunteers, it became necessary to publish for the information of the public a general description of the scheme, which had been authorised for the organisation of the force. The pamphlet, prepared in 1874 by the compiler, with the above object, is here inserted.

THE ORGANISATION OF THE ROYAL NAVAL ARTILLERY
VOLUNTEERS EXPLAINED.

‘It has been thought desirable to publish the following statement, for the purpose of giving some explanation of the services, duties, privileges, and general organisation of the Royal Naval Artillery Volunteers.

Royal
Naval
Artillery
Volunteers

‘In inviting persons to enrol themselves in the corps, the Lords Commissioners of the Admiralty desire to extend the Volunteer movement, so successfully established as an auxiliary to the land forces, to the defence of this country by sea. The proposal is novel and unprecedented in its character. In any other country than our own, it would, in all probability, be visionary. In England, however, we possess a guarantee for the success of such an undertaking, which cannot be found elsewhere. A taste for maritime pursuits pervades this insular nation, and the hope may therefore be confidently entertained that the appeal, now made to the patriotism of the nautical and aquatic sections of the community, will not be urged in vain.

How to be
recruited.

‘Eminent naval authorities have, for many years past, recommended the formation of a corps, for the purposes of coast defence, composed of persons who, while not possessing the wider experience of the seaman, are accustomed to the management of boats, and in the constant habit of going afloat. The Act for the Royal Navy Artillery Volunteers, passed in the last session at the instance of the

Naval
opinions in
favour of
such a
force.

Admiralty, and the regulations recently issued under that Act, afford the most convincing proof that, in the estimation of those who are actually responsible for the efficiency of the naval service, such a force is desirable. The concurrence of the naval members of the late administration in the various steps which have been taken, may likewise be quoted, in order to show that there is a general desire, among those to whom the welfare of the Navy is an especial object of solicitude, for the success of the movement, which it is the object of the present writer to explain.

The
harbour
defence
only.

‘It has been already stated that coast defence, and not service at sea, constitutes the especial sphere proposed for the Royal Naval Artillery Volunteers. The term coast defence is perhaps, in a certain sense, a misnomer. The defence of the most important of our commercial harbours against an attack from the sea could not be effectually conducted by a force composed exclusively of men trained for the land service alone. The approach to all the great ports of the United Kingdom from the sea involves the navigation of extensive estuaries, where floating batteries, and armed rafts, and the use of torpedoes, are essential to a complete defence, and would in point of fact effectually prevent the nearer approach of a hostile fleet. In the laying out of torpedoes on an extensive scale, a flotilla of boats would be required; and in furnishing crews for such boats, the well-trained oarsmen, who, it is hoped, will be found willing to enrol themselves in the Royal Naval Artillery Volunteers, would be enabled to render valuable service. In all probability, by their co-operation in the hour of danger, they would release an equal number of highly trained seamen, who would form the crews of sea-going cruisers. All our greatest ports, London, Hull, Newcastle, Glasgow, Bristol, Southampton, Belfast, Dublin, Cork, are situated at the head of an extensive estuary, or at some distance from the mouth of a navigable river. The mere enumeration of these names is sufficient to show how large a sphere there might be, in the event of a threatened invasion, for the employment, in the important and essential task of harbour defence, of an auxiliary force composed, not of trained seamen, but of persons who may be described generally as aquatics.

‘It is to be observed that a mere oarsman, although not trained at the great guns, or in the use of rifle and cutlass, would be enabled to do good work in a service in which the use of boats must be largely resorted to; and that, in order to take a number at a gun mounted on a raft, such as the “Nancy Dawson,” which the late Captain Cole improvised for our naval operations in the Sea of Azof, or to serve in a gun’s crew in a floating battery for harbour defence, neither sea

legs nor sea experiences are indispensable qualifications. For such duties those qualities are required which equally combine to make a good gunner and a good soldier, whether afloat or on shore—a fair share of physical strength and activity, intelligence, and, above all, courage and patriotism.

‘Designed, as the Royal Naval Artillery Volunteers have been, for the especial work of coast and harbour defence, it is not necessary that the corps should be very numerous. It certainly need not exceed the numbers of our amateur yachtsmen and oarsmen, for whom the opportunity, now offered, of taking their share in the national defence is chiefly intended. Enough will have been done, if a brigade can be formed at each of the principal ports, of a strength varying from 200 to 600 men.

The force
need not be
numerous.

‘Having described the general scope of the duties, which would devolve on the Royal Naval Artillery Volunteers, in the event of their being called out for actual service, the nature of the training proposed for the members of the force may be briefly explained. The first consideration must be to familiarise them, to some extent, with the management of boats. This instruction might occupy much time in a corps composed of men who had never been in the habit of going on the water; but, as the Royal Naval Artillery Volunteer corps is to be recruited in a large proportion from among aquatics, many of their number may be expected to possess this qualification without the necessity for special instruction.

The
training
required.

‘The next point to claim attention will be the exercise of the great guns. Here I venture to affirm, from personal experience, that the naval gun drills have been, in every detail, so carefully considered, the instructors are so completely masters of the subject which they have to teach, and the mechanical appliances are such effectual substitutes for heavy manual labour, that a few days of constant attention will suffice to make a volunteer a useful man in a gun’s crew. The class of recruits required for the Royal Naval Artillery Volunteers possesses advantages of intelligence and education, far beyond those which the practical seamen can enjoy; and we may anticipate, from the experience already acquired, that they will form some of the smartest gun’s crews in any branch of the naval service. There is neither insurmountable difficulty, nor unduly fatiguing labour, in the drill at the great guns. The intricacies could be mastered in a few days, if the volunteers were kept continuously at drill, as they necessarily would be, should they ever be called out for actual service.

‘The essential point in a Volunteer corps is to secure men

physically capable of doing their work, and who may be confidently relied upon as ready to serve, whenever they may be called upon.

‘The small-arm exercises are still more easily mastered. A rowing man will find himself able to use his cutlass efficiently in a few hours; and, after a couple of days of continuous drill, he would be able to go through the manual and platoon exercises with satisfactory smartness and precision.

‘Rowing and yachting gentlemen will perceive that they will have no difficulty in acquiring the knowledge of their drills, which is required in order to make them efficient, in the winter months. They will not find that their favourite amusements on the water, in the summer months, are incompatible with service in the Royal Naval Artillery Volunteers.

Facilities
for drill.

‘Every effort will be made to afford to those, who may be willing to join the Royal Naval Artillery Volunteers, the necessary facilities for learning their drills. For the London brigade, the “Rainbow,” a gun vessel well adapted for the purpose, is now being fitted out at Chatham. This vessel will be ready in two months from the date of this publication; and, when completed, will be moored in the Thames in a convenient position, off Somerset House. Should such an arrangement be found convenient for members of the Corinthian and other yacht clubs at Erith, it is possible that the “Rainbow” may be moved, from time to time, to moorings near the pier at Erith; and, should a desire be expressed by the members of rowing clubs higher up the Thames, an effort will be made to move the vessel to moorings near the boat-houses of any rowing clubs, which have their head-quarters below Kew Bridge.

‘No positive promise, however, can be given that the “Rainbow” shall be moved. There are many points to consider, such as draft of water, height and width of arches, and obstruction of the navigation of the river.

‘For those clubs which are established still higher up the river, where there is not sufficient water to float the “Rainbow,” facilities for instruction may be provided by mounting a 64-pounder gun on a raft, which could be towed from place to place, and moored to the bank of the river adjacent to the boat-houses belonging to the clubs. An instructor would accompany the raft; and, during the winter months, arrangements might be made for giving to Volunteers an opportunity of going through their small-arm drills in a drill-shed, or other convenient place, available for the purpose. Thus it may be found possible to extend the system of instruction, by effectual, yet inex-

pensive means, far up the Thames, and so to embrace towns such as Reading, Maidenhead, Henley, Windsor, and even the head-quarters of rowing, the University of Oxford.

‘Inquiry having been made as to whether members will be expected to appear in uniform, whenever they attend drill, it may not be superfluous to mention that the regulations are silent on this point. Members will only be required to wear uniform on special occasions, of which due notice will be given.

‘Members of the Royal Naval Artillery Volunteer corps may therefore rest assured that they will have the opportunity of being thoroughly instructed in the drills, in which it is considered desirable that they should be proficient.

Regulations as to drill.

‘The drills will comprise those for great guns, rifle, pistol, and cutlass, as in the Royal Navy, and no deviation from these drills is to be permitted.

‘All drills will be carried out by the instructor, attached to the brigades, under the officer-instructor. The permanent staff of a brigade will consist of an officer-instructor and one petty officer-instructor for each battery. The officer-instructor will be commissioned as a lieutenant in the Royal Naval Artillery Volunteers, and will be selected from officers of or retired from the Royal Navy, of and above the rank of lieutenant. He will keep the muster-rolls, and it will be his duty to make himself acquainted with all the members of his brigade, and their qualifications. He will superintend all drills and exercises, and is to have complete control over the petty officer-instructors, and to be responsible to the Admiralty for their conduct and efficiency.

The officer-instructor.

‘On the important point of the number of attendances at drill, the regulations require that every Volunteer must attend at least two drills a month, until he has obtained the standard of an efficient. An efficient must be able to perform in a satisfactory manner the duties of any number except No. 1 at heavy gun exercise, or at revolving gun exercise, as applicable to the 64-pounder guns mounted in gunboats; and he must be possessed of a good knowledge of the manual, platoon, and cutlass exercises.

Attendances at drill.

‘It has already been explained that these qualifications may easily be acquired in a fortnight of continuous attendance at drill, by the application of a very ordinary amount of intelligence and attention. The regulations expressly avoid the imposition of any compulsory service afloat in time of peace. Target practice afloat is obviously essential to the efficiency of a naval gunner; and it is therefore desirable that every Volunteer should have a fair number of opportunities

Service afloat not compulsory.

of taking part in this useful exercise. In a long summer's day, the members of the London Brigade may embark in a gunboat at Erith or Gravesend, proceed to the Maplin Sands, off Shoeburyness—which is the most convenient place for firing practice over a sea range—and return to London by a convenient hour in the afternoon or evening. It will doubtless be the desire of every Naval Volunteer to avail himself of a sufficient number of opportunities for target practice, to secure his own efficiency. But, as there are many who will be anxious to have a greater amount of exercise afloat, every Volunteer, who wishes it, may embark once a year, and remain for a period of eight days in a gunboat, manned by a crew to be furnished from the battery to which he himself belongs. It should, however, be observed that, when called out for actual service, the Volunteers will not be liable to embark in sea-going vessels. Whenever so assembled, they will serve on board any of H.M. ships employed in the defence of the coasts of the United Kingdom: unless, indeed, they volunteer for, and are found capable of doing duty in, seagoing cruisers. They will not be required to go aloft, or to attend to the fires in the stoke-hole. They will, however, have to accommodate themselves to the berthing and messing arrangements usual for the seamen of the Royal Navy.

Regulations issued
by the
Admiralty.

‘The regulations recently issued contain ample information as to the organisation of the Royal Naval Artillery Volunteers; and their practical effect will be summarised in the following extracts from the code of rules.

‘The Volunteers are raised under the Act passed in 1873. They will be called out by Royal proclamation, and will be liable to serve in any vessels employed for coast defence. They will be liable to perform all the ordinary duties of the vessels in which they may be embarked, in the same manner as those duties are performed by the regular crews of Her Majesty's ships, except those duties that can only be performed by practical seamen.

‘The Royal Naval Artillery Volunteer force, for administrative purposes, will be formed into brigades. A brigade will consist of four or more batteries of from sixty to eighty men, and will be designated by a local name.

‘The following table contains the authorised establishment for brigades and the batteries composing them :—

	Battery	Example of four batteries	Example of four batteries	Example of four batteries
Lieutenant-commander	—	1	1	1
Sub-lieutenant	1	4	6	8
Chief petty officer	1	4	6	8
First-class petty officer	2	2	12	16
Second-class petty officer	2	2	12	16
Buglers	2	2	12	16
Leading gunners and gunners equivalent to leading seamen and able seamen)	71	275	421	563
Staff:—	51	195	291	403
Lieutenant-instructor	—	1	1	1
First-class petty-officer instructor	1	4	6	8
Surgeon	—	1	1	1
Bugle major	—	1	1	1
Armourer	—	1	1	1
Total enrolled	80	320	480	640
	60	240	360	480

‘In this table, two numbers divided by a line signify the maximum and minimum strength—thus $\frac{80}{60}$ means not more than 80 and not less than 60.

‘Persons wishing to organise a corps to form part of a brigade of Royal Naval Artillery Volunteers should place themselves in communication with the Secretary of the Admiralty.

‘Whenever it is practicable, a brigade will be formed at each of the large ports in the kingdom, and the batteries composing the brigade will be raised in the immediate neighbourhood of the port.

‘When the Volunteers are not of sufficient strength at any port to form a brigade, the batteries enrolled on a part of the coast formed into a district will be formed into a brigade, and will be called a district brigade.

‘The object of this organisation is to unite separate batteries under one head, to secure uniformity among them, and to afford them the advantage of an officer-instructor.

‘Candidates for enrolment as members of the Royal Naval Artillery Volunteers must be of good character, and physically fit for the service; their eligibility will be judged by the commanding officer of the corps, assisted by such others of the corps as he may think fit to appoint for that purpose.

‘No person below the age of 17 is to be enrolled in the corps without the special authority of the Admiralty.

‘Boys of 14 years of age and upwards may be enrolled for the purpose of being trained as buglers.

‘Men belonging to any other force liable to be called out for service in case of war are not to be enrolled.

‘Apprentices are not to be enrolled without the consent of their masters.

‘Persons dismissed from any other service or corps for misconduct are not to be enrolled without the special sanction of the Admiralty.

‘The commanding officer of a corps is to give to any Volunteer, on his quitting the corps, a certificate of discharge, when requested to do so by such Volunteer.

‘Every member has power to withdraw from the corps upon giving 14 days’ notice to that effect.

‘Enrolled members are classed as efficient and non-efficient.

‘All enrolled members who do not fulfil the conditions above referred to are reckoned as non-efficient.

‘Each brigade will be commanded by a lieutenant commanding.

‘Each battery will be commanded by a sub-lieutenant.

‘In each battery there will be, as it has already been stated, one chief petty officer, two 1st class, and two 2nd class petty officers.

‘The petty officers of a battery will be selected by the commanding officer of the battery.

‘When assembled for drill or inspection, the Volunteers will be under the command of the senior naval officer of the district. When the Volunteers are assembled for drill, the senior officer will be represented by the officer-instructor, a retired commander, or gunnery lieutenant of the Royal Navy, whose duty it will be to see that all drills are properly carried out.

‘When afloat, the Volunteers are to be, in all matters whatsoever, under the command of the captain or commanding officer of the ship in which they may be.

‘The authority of the officers commanding batteries is strictly limited to their own batteries only. The discipline will be the same throughout the corps, and will be enforced by the lieutenant commanding the brigade, in conformity with the regulations issued by the Admiralty.

‘The lieutenant commanding will make arrangements for drill, securing, so far as it may be necessary, separate hours for each battery. Before adopting any final arrangements for drill, he will confer with the officer-instructor.

‘There may be an occasional general muster of the corps, when considered necessary by the lieutenant commanding.

‘The batteries will take precedence at general parades according to their numbers, and not according to the seniority of their respective commanding officers.

‘The brigade staff will not be attached to a battery, but will act under the lieutenant commanding only.

‘Officers of the Royal Naval Artillery Volunteers rank with, but after, officers of the Royal Navy and Royal Naval Reserve of their respective ranks.

‘All officers of the Royal Naval Artillery Volunteers will be commissioned by the Admiralty.

‘The commanding officers of brigades will recommend, for the consideration of the Admiralty, names of persons for the appointments and promotion of officers in their brigades.

‘The appointment of an honorary commander to a brigade is allowed, and such honorary lieutenants and sub-lieutenants as the Admiralty may think fit to sanction.

‘Officers in full pay in the Navy or Army are not eligible for other than honorary commissions.

‘The uniform approved for the officers resembles generally that worn by officers of the Naval Reserve, silver being substituted for gold lace.

‘The principle upon which the Volunteers should be officered has been one of the most frequent subjects of discussion among those who have associated themselves with the movement from the commencement, and who have been provisionally enrolled, with the sanction of the Admiralty, in anticipation of the passing of the Act of Parliament of last year.

The officers
of the
corps.

‘A desire has been expressed that no officers should be appointed to the corps, but that the Volunteers should serve only under direct naval command. Practically, the desire, so strongly felt, has been fulfilled in the arrangements which have actually been made.

‘Whenever called upon to serve afloat, or when embarked for the purpose of training, the Volunteers will be under the command of the officer, commanding the ship, in which they may be. When embarked for their first cruise in the autumn of the present year, the arrangements were, of necessity, experimental and provisional. There was a natural desire on the part of the officer commanding the “Foam” to meet the wishes of the Volunteers themselves in every possible way, consistent with the efficient performance of the service, and the carrying on of the drills and exercises required. The same considerate spirit will doubtless prevail on all future occasions; but the Volunteers, who make themselves acquainted with the regulations,

will clearly perceive that, whenever they embark, they place themselves under direct naval authority ; and that, when afloat, their own officers are never to assume any naval command whatever, unless ordered to do so by their superior naval officers.

‘The officers of the Volunteers will do their utmost to assist the naval officers to preserve discipline. They may, if they think fit, set an example to their men by taking an active part in all the duties and manual exercises. They may fall in at quarters, and take any number at the gun. In short, they may become, as much as they please, active working seamen and efficient practical gunners. It is for them to use their own discretion in determining how much or how little they shall participate in the drills and exercises ordered by the naval officers in command.

‘When at drill, as it has already been pointed out, the officer-instructor will superintend the instruction of the Volunteers, and he will be responsible that all exercises are properly carried out, in accordance with the regulations from time to time laid down for the instruction of the Royal Navy. It will thus be evident that the paramount and undivided authority of the naval officers over the Volunteers when afloat, and the superior responsibility of the officer of instruction when the Volunteers are at drill, so largely overshadow the authority of the officers of the Royal Naval Artillery Volunteers in all matters, excepting those which relate to discipline and the civil administration and organisation of the corps, that it could not reasonably be expected that retired naval officers of rank should volunteer to become battery officers in the Royal Naval Artillery Volunteer Corps. Naval officers of less exalted rank do not often retire, if they have a great zeal for the service. Some exceptions, however, there must be to this general rule ; and it is probable that a certain number of retired officers from the junior ranks of the Navy will, hereafter, kindly offer their services to command brigades or batteries in the ports or districts in which they may happen to reside. The Volunteers will at all times feel a pride in availing themselves of such opportunities of acting under officers who have received a high professional training in Her Majesty’s naval service.

‘While the effect of the arrangements, which have been described, necessarily limits the sphere of the officers of the Royal Naval Artillery Volunteers, their services, in several important points, are not the less essential. It is to them that the Admiralty must look for the exercise of their personal influence, in inducing recruits to join their respective brigades and batteries ; and their moral influence will be the principal security for the maintenance of good discipline in a

force composed exclusively of Volunteers. Although, under the regulations, no fixed standard of efficiency is expressly required in an officer of the Royal Naval Artillery Volunteer force, those among them, who can command sufficient leisure for the purpose, will readily appreciate how excellent an effect must be produced by the personal example of an officer, who will take pains to make himself acquainted with the drills and exercises, in which the men under his command are instructed. He will have the opportunity of obtaining the same certificate of proficiency, which is given to those officers of the Naval Reserve, who become qualified to drill the seamen of the Reserve at the great guns, and in the small-arm exercises.

‘With the view of enlisting, in support of the Naval Volunteer movement, the potent influences which are derived from the *esprit de corps*, wherever it may reasonably and prudently be encouraged, it is proposed to associate certain batteries in the London brigade with some of the principal rowing and Corinthian yacht clubs on the Thames, and to give commissions to any gentlemen, otherwise eligible, who are instrumental in raising a full battery of Naval Volunteers.

‘The following list of some of the principal rowing clubs will serve to show the large number of gentlemen, from whom assistance may be expected, in promoting the success of a movement for extending the Volunteer service to a certain sphere of naval operations:—

The row-
ing and
Corinthian
yacht
clubs.

Name of Rowing Club	No. of Members
London	480
Kingston	425
Thames	300
Ino	300
Waldegrave	200
Twickenham	175
West London	170
Oscillators	162
North London	150
Grove Park	150
Isleworth	100
Ilex	100
Molesey	—

‘The Corinthian yacht clubs on the Thames are equally able to render assistance, and are indeed capable of raising, if they think fit, an entire brigade for the Royal Naval Artillery Volunteer Corps.

‘The resources of the clubs located on the banks of the Thames. have been particularly specified; because the present writer, in his connection with the movement under consideration, is more imme-

diately identified with that river. Readers of these pages, residing in the vicinity of any of our great ports, will doubtless be able to discover equally ample materials for the foundation of a sufficient force, for the purposes of co-operation in the defence of the coast, in their own neighbourhood. A corps, though it may be raised at some distance from the sphere of its intended operations, in the event of threatened invasion, will not be the less valuable for the defence of a great port.

‘The railway and the telegraph afford the means of concentrating large bodies of men in a few hours at any port on the shores of the United Kingdom. Wherever the Coastguard are stationed, the means exist of giving instruction to the Naval Volunteers. All the out-ports, at which men have been enrolled, can be visited by a gun-boat at frequent intervals, to embark the Volunteers for target practice afloat; while those who wish to go to sea for an eight days’ cruise, will have, every year, the opportunity of doing so.

The
Volunteer
movement.

‘In conclusion, it may not be superfluous to offer a few observations on the Volunteer movement generally. The most cogent inducements to Volunteer activity may appear to be wanting at the present time. Our country is happily not threatened with the danger of foreign invasion. A becoming modesty will deter any individual connected with the Volunteer service from arrogating to himself any share in the prestige and distinction, which are the special privilege of the Regular services. It is an essential feature of the present movement that there shall be no contribution from the State in the form of pecuniary reward for services rendered; and that every effort shall be made by the Volunteers to impose as small a burden as possible on the Exchequer. The sterner sense of duty, which is now encouraged among the Volunteers for land service, is opposed to all attempts to gain popularity for the auxiliary forces by festivals, holidays, and entertainments.

‘While, however, all these inducements and attractions are withheld, a higher standard of efficiency in the officers and the men is properly insisted on. In presence of the difficulties which arise from the altered conditions of the service, some earnest friends of the Volunteer movement have been oppressed with doubts, as to the possibility of stimulating the patriotism of the country to such a pitch that Volunteers shall still be forthcoming in a time of profound peace. I do not conceal my individual opinion that compulsory service may fairly be required, from every individual of military age, when the country is in danger. Unfortunately, so strong a measure would probably meet with an amount of resistance, which could not

be overcome in this free country, where nothing affecting the social habits and prejudices of the people can be proposed, which is not universally popular. But I venture to hope that we may rely, in the absence of direct legal compulsion, on motives even more powerful than the strong arm of the law. If every man who is capable of co-operating in the defence of his country should feel himself compelled, by his sense of duty and patriotism, to enter his name in the roll of her defenders, the liability to service, thus imposed by the free will of the Volunteer upon himself, will be a far more effectual safeguard than legal compulsion, for the security and the honour of England.

‘The Volunteer movement affords the occasion for teaching, in the most practical form, the duty of self-sacrifice in a worthy cause.

‘In the artificial conditions of modern society, there are multitudes of men, who, in the ordinary exercise of their vocation, are unduly deprived of the opportunities for physical exercise and development. More especially is this true of the younger members of the professional and commercial classes. To them an appeal is now most earnestly made on behalf of the Royal Naval Artillery Volunteers. In taking a part in our drills and exercises, they will do a work beneficial to themselves individually, and conducive to the welfare of their country.

REGULATIONS FOR THE 'ROYAL NAVAL ARTILLERY VOLUNTEERS.'

Constitution and Establishment.

Authority.	1. The 'Royal Naval Artillery Volunteers' are raised under the 'Royal Naval Artillery Volunteer Act of 1872.' They are subject to the provisions of that Act, and to all regulations made with regard to them by the authority of the Admiralty.
Liability to actual service.	2. By Royal Proclamation, the Royal Naval Artillery Volunteers may be assembled for actual service; and whenever so assembled, they will be liable to serve on board any of Her Majesty's ships or vessels employed in the defence of the coasts of the United Kingdom, or in any of the tenders or boats attached to such vessels. They will also be liable to perform all the ordinary duties of the vessel in which they may be embarked, in the same manner as those duties are performed by the regular crews of Her Majesty's ships, except those duties that can only be performed by practical seamen. They will not be required to go aloft, or to attend the fires in the stoke-hole. They will accommodate themselves to the berthing and messing arrangements usual for the seamen of the Royal Navy.
Corps, definition of.	3. A corps is a body of persons who combine, under common rules, to form a part of the Naval Artillery Volunteer Force. The members of a corps are either enrolled or honorary.
Enrolled members.	Enrolled members are persons of every grade, whose names are duly entered for service in the muster-rolls of a corps. Honorary members are persons who contribute to the funds of a corps, but are not enrolled for service.
Formation.	4. The Naval Artillery Volunteer Force, for administrative purposes, will be formed into brigades, and each brigade will consist of four or more batteries of from 60 to 80 men.
How to be named.	5. Each brigade will be designated by a local name, in addition to its number in the force. Each battery will be designated by its number in the brigade. Every corps will bear a local name only.
Commanding officers.	6. Each brigade will be commanded by a lieutenant commanding. Each battery will be commanded by a sub-lieutenant. Every corps will have a commanding officer, who will of necessity be the senior officer belonging to the corps, no matter what his rank may be, and who will be responsible, under the 'Naval Artillery Volunteer Act, 1872,' for the management of the internal affairs of the corps.
Establishment.	7. The following table contains the authorised establishment for brigades and the batteries composing them :—

	Battery	Brigade of four batteries	Brigade of six batteries	Brigade of eight batteries
Lieutenant-commander	—	1	1	1
Sub-lieutenant	1	4	6	8
Chief petty officer	1	4	6	8
First-class petty officer	2	8	12	16
Second-class petty officer	2	8	12	16
Buglers	2	8	12	16
Leading gunners and gunners (equiva- lent to leading seamen and able seamen)	{ 71	275	421	563
Staff:	{ 51	125	301	403
Lieutenant-instructor	—	1	1	1
First-class petty officer-instructor . .	1	4	6	8
Surgeon	—	1	1	1
Bugle-major	—	1	1	1
Armourer	—	1	1	1
Total enrolled	{ 80	320	480	640
	{ 60	240	360	480

In this table, two numbers divided by a line signify the maximum and minimum strength—thus $\frac{80}{60}$ means not more than 80 and not less than 60.

Formation of Corps.

8. Persons wishing to form a corps to form part of a brigade of Royal Naval Artillery Volunteers should place themselves in communication with the Secretary of the Admiralty.

9. The Admiralty, in considering offers of the services of a new corps, will have regard to the number of corps or batteries already existing on the same part of the coast where the proposed corps would be.

10. The formation of a new corps will not be sanctioned, unless a sufficient number of persons to form a battery are prepared to enrol themselves, and whilst any battery already existing in the locality is below its establishment.

11. In offering the services of a new corps for acceptance, it should be stated:—

- (a) The place proposed for its head-quarters.
- (b) The number of persons who are prepared to enrol themselves.
- (c) The name and address of some person with whom communications on the subject may be made.
- (d) The brigade of which it will form a part.
- (e). That a proper place will be secured for the safe custody of any Government arms and ammunition which may be issued.

Course to be pursued for the formation of a new corps. Reason for formation.

New corps not to be formed under certain circumstances. Information to be given on application.

(Form in Appendix A.)

12. Whenever it is practicable, a brigade will be formed at each of the large ports in the Kingdom, and the batteries composing the brigade will be raised in the immediate neighbourhood of the port.

Single brigade.

District
brigade.

When the Volunteers are not of sufficient strength at any port to form a brigade, the batteries enrolled on a part of the coast formed into a district, will be formed into a brigade, and will be called a District Brigade.

The object of this organisation is to unite separate batteries under one head, to secure uniformity among them, and to afford them the advantage of an officer-instructor.

Precedence and Command.

Rank of
the force.

13. The 'Royal Naval Artillery Volunteer Force' takes precedence immediately after the 'Royal Naval Volunteers' established by the Act of 1859.

Precedence
of brigades.

14. The relative precedence of the brigades forming the force is determined by the date on which they were first severally established.

Precedence
of corps.

15. The relative precedence of corps is determined by the date on which the Secretary of the Admiralty has first received a letter offering the services of the corps.

Precedence
of officers
with
others.

16. Officers of the Royal Naval Artillery Volunteers rank with, but after, officers of the Royal Navy and Royal Naval Reserve of their respective ranks.

Precedence
of officers
with each
other.

17. The relative precedence of officers of the whole force is determined solely by the rank and date of their commissions in the force.

Precedence
of officers
of same
date.

18. The relative precedence of officers bearing commissions of the same date is determined by the order in which their names appear in the Navy List.

Nothing in these regulations is to give a claim to any officer of the Royal Naval Artillery Volunteers to assume command of any of Her Majesty's land forces on shore, nor to any officer of Her Majesty's land forces to assume command of any of Her Majesty's naval forces.

But when officers of the Royal Naval Artillery Volunteers are employed on shore on joint service with Her Majesty's Land Forces, their relative rank shall carry with it all precedence and advantages attaching to the rank with which it corresponds, except command as aforesaid.

To be
under com-
mand of
senior
naval
officer
whenever
assembled.
Not to as-
sume naval
command
unless
specially
ordered.

19. All Royal Naval Artillery Volunteers, when assembled for drill or inspection, or voluntarily doing any naval duty either afloat or on shore, will be under the command of the commander-in-chief, or senior naval officer of the district within which such Royal Naval Artillery Volunteers are undergoing drill or inspection, or doing duty.

20. The officers and petty officers of the Royal Naval Artillery Volunteers shall command each other, and the gunners and buglers of the force, agreeably to their respective ranks, in all matters relating to their duties; but none of them are ever to assume any naval command or authority whatsoever, unless ordered to do so by their superior naval officers, and they are to be, in all matters whatsoever, under the command of the captain or commanding officer of the ship in which they may be, and of the officer of the watch for the time being whatsoever his rank may be.

Honours and Decorations.

21. A guard of honour may be provided as a matter of course for a member of the Royal Family, or the Admiralty, on arrival in the neighbourhood of the head-quarters of a brigade; but in no other case will any body of the Naval Artillery Volunteers take part in any public procession or ceremony, or form a guard of honour, without the special authority of the Admiralty or the senior naval officer of the district. Guards.

22. The only decorations that may be worn on the left breast are those given by the Queen or by a Foreign Sovereign. Decorations.

In the last case mentioned, Her Majesty's permission to accept and wear the decoration must have been granted.

The medal of the Royal Humane Society may be worn.

Officers.

23. All officers of the Royal Naval Artillery Volunteers will be commissioned by the Admiralty. Appointment.

24. The commanding officers of brigades will recommend for the consideration of the Admiralty, names of persons for the appointments and promotion of officers in their brigades. Commanding officers to recommend.

In order to enable the Admiralty to judge the qualifications of the persons recommended, the commanding officer will forward, with his recommendation, a statement giving the name, age, residence, place of education, and occupation or profession of the candidate, as well as a medical officer's certificate, stating that the candidate is in good health and fit to perform the duties of an officer.

25. If any person recommended for an appointment as an officer holds a commission in the Royal Navy or other force, the nature of such commission should be stated in the letter of recommendation. Holding a commission in other forces.

26. Officers on full pay in the Navy or Army are not eligible for other than honorary commissions. Eligibility of full-pay officers.

27. The appointment of an honorary commander to a brigade is allowed, and such honorary lieutenants and honorary sub-lieutenants as the Admiralty may think fit to sanction. Honorary commander.

28. The appointments of an honorary chaplain and staff-surgeon to a brigade are allowed at the discretion of the Admiralty. Honorary chaplain and surgeon.

29. The appointments of all honorary officers will cease whenever the force is called out for actual service, unless the Admiralty shall see fit to accept the services of any such officers who may volunteer for active service. Honorary appointments, when to cease.

30. No officer holding an honorary commission can, in virtue of it, take precedence of any officer holding a substantive commission of the same rank. Precedence of honorary officers.

31. Every officer is required to possess a competent knowledge of his duties, and to give a proper attendance at the drills of his corps. Officers to possess a knowledge of duties, &c.

Any officer who does not attend the number of drills prescribed for the enrolled Volunteers of his corps, to qualify them for certificates of efficiency,

will not be allowed to retain his commission unless the Admiralty may see special reasons for a relaxation of this regulation.

Petty Officers.

Appoint-
ment.

32. The petty officers of a battery are appointed by the commanding officer of the battery, from among the enrolled members of the battery.

Leading
gunners.

33. Leading gunners may be appointed by the commanding officer of a battery, in the proportion of one to every twenty of enrolled gunners.

Reduction.

34. A petty officer or leading gunner may be reduced by the commanding officer of a brigade, for any sufficient cause ; such cause to be judged by the officers of the brigade sitting as a Court of Inquiry.

Enrolled Members.

Qualifica-
tion

35. Candidates for enrolment as members of the Royal Naval Artillery Volunteers must be of good character and physically fit for the service ; their eligibility will be judged by the commanding officer of the corps, assisted by such others of the corps as he may think fit to appoint for that purpose.

Age.

36. No person below the age of 17 is to be enrolled in the corps without the special authority of the Admiralty.

Boys of 14 years of age and upwards may be enrolled for the purpose of being trained as buglers.

Disquali-
fication.

37. Men belonging to any other force liable to be called out for service in case of war are not to be enrolled.

Apprentices are not to be enrolled without the consent of their masters.

Persons dismissed from any other service or corps for misconduct are not to be enrolled without the special sanction of the Admiralty.

Certificate
of dis-
charge.

38. The commanding officer of a corps is to give to any Volunteer, on his quitting the corps, a certificate of discharge, in Form B. of the Appendix, when requested to do so by such Volunteer.

Classifica-
tion.

39. Enrolled members are classed as efficient and non-efficient.

Efficient.

40. An efficient member must have fulfilled the conditions prescribed by the Admiralty from time to time.

Non-effi-
cient.

41. All enrolled members who do not fulfil the conditions above referred to are reckoned as non-efficient.

Honorary Members.

Number
and posi-
tion.

42. The number of honorary members attached to any corps is not regulated by the Admiralty, and such members are not included in the muster-roll of the corps to which they are attached.

They are not subject to discipline nor allowed to interfere with the duties of the corps, but they are permitted to wear its uniform, unless a special provision to the contrary is contained in the authorised rules of the corps.

Rules.

Must be
approved.

43. In order to give legal force to the rules of a corps for the management of its affairs, they must be submitted to the Admiralty for approval.

44. All rules which are to be forwarded for approval must be transmitted in duplicate, one copy to be retained at the Admiralty, the other to be returned to the corps, with any alterations that may be required.

To be trans-
mitted in
duplicate.

Courts of Inquiry.

45. A court of inquiry is not a judicial body ; it has no power to administer an oath.

Nature of.

It is to be considered as a Board of which the Admiralty or an officer in command of a brigade or corps may make use, to assist him in arriving at a correct judgment on any subject upon which it may be expedient to institute an inquiry.

46. The duties of a court of inquiry depend on the instructions which the convening authority may think proper to give.

Duties of.

It may be either employed merely in collecting and arranging evidence, or it may, in addition, be directed to give an opinion as to the facts established by that evidence ; but it has no power to pronounce any judgment as to the course to be taken by the convening authority in dealing with those facts.

When facts connected with the conduct of an individual are submitted to the investigation of a court of inquiry, it is necessary that the instructions for the guidance of the court should be sufficiently specific, as regards matter, names, dates, and places, to convey clearly to the court the nature of the subject into which it is appointed to inquire, and also to enable the person whose conduct is called in question to know what he has to answer.

It rests with the authority who orders the assembly of the court of inquiry to decide whether it shall be open or close.

All evidence taken by a court of inquiry is to be recorded as nearly as possible in the words of the witness and in the order in which it is received.

The proceedings when closed are to be signed by the president and members, after which they are to be forwarded by the president to the convening authority.

47. A court of inquiry may be re-assembled as often as the superior authority may deem necessary, and on every occasion of its meeting it is competent to receive and record new evidence.

May be re-
assembled.

The commanding officer of a brigade is authorised to assemble a court of inquiry, to investigate any matter with which he himself has the power of dealing.

Power of
command-
ing officer
to assem-
ble.

Discipline.

48. The course to be adopted as to the discipline of the Volunteers will be found in Part III. of the Naval Artillery Volunteers Act.

49. Meetings are not to be held in the corps for the purpose of expressing an opinion upon the acts of a commanding officer, or of recommending him to take a particular course of action ; nor are memorials to be drawn up to the same effect ; and no meetings except those called together by or under the authority of the commanding officer of a brigade or corps, who will be responsible for doing so, will be recognised.

Meetings
not to be
held on
actions of
superiors.

If any Volunteer has cause to think himself aggrieved, he will represent his case to the commanding officer of his battery. Any appeal against the decision of the commanding officer of the battery will be made through him to the commander of the brigade, and any further appeal will be made through both these officers to the Admiralty.

Not to attend political meetings in uniform. Bands of music. Permanent staff not to receive presents.

50. Members of the force are not, individually or collectively, to attend political meetings, or join in public political discussion or demonstrations in uniform.

51. Bands of Volunteer Brigades are not to appear in uniform, for any purpose, without the consent of the commanding officer of the brigade.

52. Members of the permanent staff will be held responsible that they do not allow themselves to be complimented, either directly or indirectly, by presents or collective expressions of opinion from persons who are serving or who have served in the brigade to which they are attached.

Volunteers to salute superiors of all services.

53. Officers and men of the Royal Naval Artillery Volunteers, when in uniform, are to pay the customary marks of respect to such officers of the Navy, Army, and Auxiliary Forces as are entitled to be saluted by officers and men of corresponding rank in their own service.

Officers to observe and enforce all regulations.

54. Every officer and petty officer shall make himself acquainted with, and shall duly observe and obey, and as far as in him lies, enforce the due execution of the 'Royal Naval Artillery Volunteer Act, 1873,' and the regulations for the 'Royal Naval Artillery Volunteer Force,' together with all regulations, instructions, and orders, which may from time to time be given or issued by the Admiralty, or by any superior officer, and shall in all respects conform his conduct to the customs and usages of Her Majesty's Naval Service.

Discipline in camp.

55. When Royal Naval Artillery Volunteers are assembled with the Regular Forces of the Army in camp or for training, they will be under the 'Naval Discipline Act, 1866,' in the same manner as if they were on actual service, and will be placed under the immediate command of an officer of Her Majesty's Navy.

Camp rules will apply in all respects to the Royal Naval Artillery Volunteers.

The Naval Volunteers must perform the camp duties of fatigue, cooking, &c.

Case of misconduct when training to be reported.

56. In case of grave misconduct of any of the Royal Naval Artillery Volunteers whilst on board any of H.M. ships for the purpose of training, the officer in command of the ship will report the circumstance to the Admiralty through the usual channel.

Assemblies of the Force.

Conditions on which to meet under arms. Brigaded with other forces.

57. The Royal Naval Artillery Volunteers are not to assemble under arms for any purpose unconnected with parade, drill, or rifle practice, except with the approval of the Admiralty.

58. The Royal Naval Artillery Volunteers may, when circumstances permit, be brigaded with other forces, the sanction of the Admiralty having been previously obtained.

59. When any of the Royal Naval Artillery Volunteers desire to visit any garrison or camp as a naval body, the permission of the Secretary at War must first be obtained through the Admiralty.

Visiting
garrison
or camp.

Upon all occasions of the Royal Naval Artillery Volunteers entering a garrison or camp as a body, the officer in command must duly report his arrival to the senior naval officer present, or, if there is not one, he will wait on the officer in command of the garrison or camp.

60. When the Royal Naval Artillery Volunteers are brought together under arms, at rifle-shooting matches, or other occasions, with other volunteer corps, or with any of Her Majesty's Land Forces on shore, the officer in command of the Royal Naval Artillery Volunteers, present, shall take care that everyone under his command complies with all the regulations of the Land Forces relative to the camp or ground on which they may be, and he shall confer with the senior officer of the Land Forces, and act in concert with him, so that the Royal Naval Artillery Volunteers may in all cases act in accordance with the orders under which the Land Forces are acting; but it is to be distinctly understood that nothing in this regulation is to give a claim to any officer of Her Majesty's Navy, or of any Naval Volunteer Corps, to assume command of any of Her Majesty's Land Forces, nor to any officer of Her Majesty's Land Forces to assume command of any of Her Majesty's Naval Forces.

Command
at rifle-
shooting
matches.

61. When the Volunteers, at the termination of an exercise, are to return by railway or boat to their head-quarters, the arms are to be examined, and all the ammunition which has not been expended must be collected and placed in a metal or leather case, with a view to its being conveyed in safety to the head-quarters.

Surplus
ammuni-
tion to
be col-
lected.

Stores.

62. The commanding officer of a corps is responsible to the Admiralty for all stores which are supplied by Government for the use of the corps.

Respon-
sibility for
and care of.

63. Each corps will be supplied gratuitously with arms from the Government stores to the full number of its enrolled members, if required.

Arms to be
supplied by
Govern-
ment.

64. The arms to be supplied are in Appendix C.

65. Before any Government arms can be issued, it is necessary that the Admiralty shall be satisfied that one or more places of security for the custody of the arms have been provided at the expense of the Volunteers. The drill ships, Coastguard stations, or police stations will probably be available in some places for the purpose.

Description
of arms.
Armouries
to be avail-
able before
arms are
supplied.

66. Commanding officers of corps are to apply for the arms required in the prescribed form of requisition given in Appendix D., addressed to the Secretary of the Admiralty.

Applica-
tion for
arms.

67. The arms of a brigade will be marked previously to their issue, and a request to that effect is to be inserted in the requisition on which the arms are demanded.

Marking
arms.

No other marks than those on them when issued are on any account to be put on the arms.

68. All arms issued to the corps remain the property of Her Majesty's Government, and the commanding officer for the time being is held respon-

Respon-
sibility for
arms.

sible for their being at all times in a serviceable state, and for their being returned into store when required in good condition, fair wear and tear excepted.

Cleaning
and care
of arms.

69. Great attention should be paid to the proper cleaning and care of the arms entrusted to the Volunteers, and the commanding officers are to point out to those under their command that, should rust be allowed to accumulate on any part of a rifle, it must inevitably impair the accuracy and efficiency of the weapon.

Depositing
arms.

70. The arms are to be deposited after drill in the armouries of the brigade or corps, except when the commanding officer may judge it expedient to permit members of the brigade to keep their arms at their own houses.

As the commanding officer is responsible for the condition of the arms, this permission may be withdrawn by him whenever he may consider it necessary.

The arms retained in private custody will be subject to inspection at any time, and they are to be examined at least once in six months by the commanding officer of the brigade or officers appointed by him for that purpose.

Repairs of
arms.

71. Arms requiring repair are to be deposited with the gunner of the drill ship to which the brigade is attached.

Charge for
repairs.

72. Repairs of arms arising from fair wear, found to be necessary in order to make the arms serviceable, will be executed free of charge; the expense of other repairs will be borne by the corps.

Allowance
of ammu-
nition.

73. Ammunition in the following proportion, to be reckoned from the 1st April in each year, is allowed :—

For Guns.

For each battery of Brigade	100 shot
" " "	25 shell
" " "	30 blank
or	
For each trained man	4 shot
" efficient	2 shot
And for the battery	25 shell
" "	30 blank

For Small Arms.

	Gratis	Allowed to be purchased	Total
For every efficient for his first year's service:			
Rifled ball	70	50	120
Blank	10	50	60
Pistol	100	100	200
Caps	110	110	220
For every efficient after his first year's service:			
Rifled ball	50	70	120
Blank		60	60
Pistol	50	100	150
Caps	60	110	170

Requisitions for small-arm ammunition, in accordance with the established proportion, are to be forwarded to the commanding officer of the nearest drill ship or district coastguard ship for transmission to the nearest control officer. Special demands should be forwarded to the Secretary of the Admiralty by the captains of the above ships for approval, on form given in Appendix E.

Storing of ammunition.

74. Every brigade is required to provide a secure place for the custody of its small-arm ammunition; but in cases where the store of ammunition is sufficiently large to make it desirable that it should be stored in the magazines of any of Her Majesty's ships, used as drill ships for the Volunteers, commanding officers of such ships will afford facilities for its reception.

75. Every care is to be taken in the conveyance and general handling of ammunition, and the regulations and customs of the Royal Navy in that respect are to be strictly adhered to.

Conveyance of ammunition.

76. Metal cylinders, or leather cartridge cases, for conveying the surplus ammunition collected from the pouches of Volunteers, under the provisions of Article 61, will be supplied at cost price.

Metal cylinders, &c.

77. No article of equipment will be returned into store for the purpose of being replaced, until it has become thoroughly unserviceable. No articles will be returned into store on account of being of an obsolete pattern without the authority of the Admiralty.

Return of articles unserviceable or obsolete.

78. All arms or other stores supplied free of cost and placed in the custody of the Royal Naval Artillery Volunteers, are, if lost, destroyed, or injured by fault or neglect, to be paid for by the corps.

Stores lost or injured to be paid for.

79. All demands for stores, in accordance with the established proportion allowed, are to be made out in the War Office forms in use in Her Majesty's Navy, and are to be forwarded by the commanding officers of brigades to the nearest drill ship or Coastguard ship for transmission to the nearest control officer. Special demands should be forwarded to the Secretary of the Admiralty for approval by the captains of the above-named ships.

Demands for stores.

Drill.

80. The drills of the Royal Naval Artillery Volunteers will comprise the drills for great guns, rifle, pistol, and cutlass, as in the Royal Navy, and no deviation from those drills is to be permitted.

Nature of.

81. All drills will be carried out by the instructors attached to the brigades under the officer-instructor, and when on board any of Her Majesty's ships they will be also subject to the supervision of the commanding officer of the ship.

By whom to be carried out.

82. The qualification necessary for an efficient will be found in the Appendix F, and may be amended as the Admiralty may from time to time think necessary.

Qualification for 'efficient.'

83. A badge of efficiency will be worn by men who were returned as 'efficient' in the last annual brigade. The badge will consist of a chevron of silver lace worn on the right arm above the wrist.

Badge of efficiency.

Men who have been five times returned as efficient may wear one star,

and those who have been returned ten times may wear two stars above the badge.

Trained
man.

84. Volunteers who pass the examination for trained man, as in the Royal Navy, will be so designated, and will wear two chevrons of silver lace on the right arm above the wrist.

Non-effi-
cients to
attend
drills.

85. Every Volunteer must attend at least two drills a month until he has obtained the standard of an 'efficient.'

Firing
practice
to be super-
intended.

86. No firing practice with great guns is to be carried on by Volunteers, except under the superintendence of an officer of the Royal Navy, or of an officer-instructor of Volunteers, unless a relaxation of this rule has been especially sanctioned by the Admiralty.

Precautions
when at
gun-prac-
tice.

87. Sword bayonets are not to be worn at gun-drill, or when moving powder.

No smoking is on any account to be allowed in the vicinity of magazines or cases containing powder.

No persons are to be allowed to congregate round barrels or cases containing powder.

Powder cases or barrels are not to be opened either inside a magazine, or immediately outside the door.

Allowances.

On actual
service.

88. When on actual service the Royal Naval Artillery Volunteers will receive the same pay, allowances, and victuals as the officers and continuous service seamen of the ranks and ratings in the Royal Navy of relative rank, and will have the same means of allotting pay to wives, relatives and friends, and whilst on actual service will be treated in the same manner in every respect.

Not on
actual
service.

89. When not on actual service and embarked on board any of Her Majesty's ships for more than forty-eight hours, the Volunteers will be victualled for the whole time they are so embarked, or receive compensation for provisions at the rate of 1s. 6d. per day; but when they are embarked for less than forty-eight hours, they will not receive victuals or an allowance in lieu.

Wounds or
injuries on
service or
drill.

90. If a Volunteer is wounded or injured on service or on drill, he will be entitled to the same pension to which any seaman in Her Majesty's Navy would be entitled for a similar wound or injury; or if killed, slain, or drowned on service, or on drill, his widow (if any) will be entitled to the same gratuities out of Greenwich Hospital Funds as the widow of any other seaman of the Navy of the same rating.

Hospital
or sick
quarters.
Applica-
tions for
pensions.

91. Volunteers taken seriously ill or injured whilst undergoing drill, may be sent to a naval hospital or sick quarters for treatment.

92. Applications for pensions or compensations for injuries or hurts received whilst on service or drill, are to be specially made to the Admiralty; the nature and cause of the injury are to be fully reported, and the names of the witnesses, as also whether blame was attributable to the Volunteer making the application, when the case will be considered as it deserves.

93. Volunteers are allowed to purchase at the Government rate any clothing or necessities that may be requisite for their outfit or dress as belonging to the corps. Purchase of clothing, &c.

Permanent Staff.

94. The permanent staff of a brigade will consist of one officer-instructor to the brigade, and one petty officer-instructor for each battery composing the brigade. Composition.

95. The appointments to the permanent staff will be made by the Admiralty, and will be tenable for a term of five years, or for such lesser period that the Admiralty may think fit. Appointment.

96. The officer-instructor will be commissioned as lieutenant in the Royal Naval Artillery Volunteers, and will be selected from officers of, or retired from, the Royal Navy, of and above the rank of lieutenant. Officer whence selected.

97. The officer-instructor will be required to undergo a course of instruction in one of the gunnery ships to qualify him for the duties of instructor in heavy and truck gun drills, rifle, pistol, and cutlass exercises. Qualification.

98. As the services of an officer-instructor will be at all times required by the Volunteers, he will not be permitted to follow any profession or appointment, public or private. Not to hold other appointment.

99. No officer whose age exceeds fifty years is eligible for the appointment of officer-instructor. Age.

100. An officer-instructor of Naval Volunteers is purely a staff officer, and except for the purpose of instruction, is not entitled, by virtue of his superior rank, to take the command of any force of Naval Volunteers, when an officer of the corps is present. Rank and position.

101. An officer-instructor is appointed to give instruction to the Volunteers. He is subject to the orders of his commanding officer, and he is required to assist him in carrying on the naval duties of the brigade; but he is not to take any part in the civil affairs of the brigade. General duties.

It is his duty to keep the muster-rolls of the brigade, and to make himself acquainted with all the members of the brigade, and their qualifications and dispositions.

He is to superintend the drills and exercises of the brigade, and is to have complete control over the petty officer-instructors of the several batteries, and is responsible to the Admiralty that their duties are properly performed, and that the drills are in accordance with those laid down for the Royal Navy.

102. The officer-instructor is required to keep a diary of the instruction imparted by him to the Volunteers according to Form G. Appendix. This diary is to be certified by the commanding officer of the brigade, and transmitted to the Admiralty on the 1st of every month. Diary.

103. The officer-instructor will, under the commanding officer of the brigade, have control over the petty officer-instructors, both as regards their discipline and their duties as instructors; and he will, should he have occasion, report any misconduct or incompetency of a petty officer-instructor to the Admiralty. Control over Petty Officer-instructors.

Petty Officer-Instructors.

Rank and position.

104. The petty officer-instructors will have the rank of first-class petty officers in the Royal Naval Artillery Volunteer Force, and will be selected from pensioned petty officers of the Royal Navy, and must hold a certificate from one of the gunnery ships of competency as an instructor in heavy and truck gun drill, rifle, pistol, and cutlass exercises.

They will be purely staff petty officers, and will not be entitled, by virtue of their superior rank, to take the command of any of the Naval Volunteers, when a petty officer of the corps is present, except for the purpose of instruction.

Duties.

105. The petty-officer instructors are to give instruction to the Volunteers under the direction of the officer-instructor. They are subject to the command of their superior officers of the naval Volunteers, and are to assist them in carrying on their naval duties, but they are not to take any part in the civil affairs of the brigade.

Conduct.

106. The petty officer-instructors will be expected, on all occasions, to set an example of what the Naval Volunteers should attain to, and they will only be allowed to retain their position so long as they conduct themselves as petty officers of the Royal Navy should do.

They are to consider the officer-instructor as their immediate head, and apply to him in all matters that may be necessary.

Diary.

107. The petty officer-instructors will each keep a diary of the instruction imparted by him to the Volunteers according to form in Appendix H. This diary is to be certified by the commanding officer of the battery, and transmitted weekly to the officer-instructor.

Pay of permanent staff.

108. The permanent staff will receive pay as follows :

Officer instructor		10s. per day.
Petty officer-instructor		3s. per day.

Uniform.

FOR OFFICERS.

109. The uniform to be worn by the Royal Naval Artillery Volunteers is to be of the same pattern as for officers of the corresponding ranks in the Royal Navy, with the following exceptions, viz :

Distinctive lace.

110. Instead of each distinctive stripe of half-inch gold lace round the sleeve, there is to be a stripe formed of two waved lines of quarter-inch silver braid, running parallel to each other so as to form bands three-quarters of an inch wide, the blue cloth to show quarter of an inch between the lines of braid.

Buttons.

111. The buttons to be of the naval pattern, with the letters R.N. on one side of the anchor and A.V. on the other side.

The crown and anchor to be gilt, and the remainder of the button silver.

Epaulettes.

112. The epaulettes to be silver, and, instead of the anchor on the

epaulette, there is to be a badge consisting of an anchor in the centre, surrounded by the words 'R. N. A. Volunteers,' embroidered in gold.

Crown and stars, when worn on the epaulettes, to be embroidered in gold.

113. Instead of the bullion loop on the cocked hat, the loop to be formed of two silver braids, waved as on the coat sleeves, and the tassels to be silver. Hat.

114. The badge for the cap to have the letters R.N. placed on one side of the anchor, and the letters A.V. on the other side. Badge for cap.

The anchor and letters to be embroidered in gold, and the surrounding laurel leaves in silver. The crown to be embroidered in gold and silver, as in the naval pattern.

115. The plate of the sword-belt and the swivel to be silver. The crown and anchor on it to be gilt, and the letters R.N.A.V. on each side of the anchor, also gilt. Sword-belt

116. All lace and embroidery, except where otherwise ordered in these regulations, is to be of silver. Lace and embroidery.

DRESS UNIFORM.

117. Coat the same as undress.

Trowsers.—The lace on the seam to be silver.

Sword-belt.—The embroidered lines to be silver.

Dress uniform.

The dress trowsers and sword-belt to be worn only on such occasions as are customary in the Royal Navy.

PETTY OFFICERS AND GUNNERS.

118. The uniform to be of the same pattern as for petty officers and seamen of the Royal Navy, with the following exceptions, viz. :

119. The buttons on jackets of chief petty officers to be of silver, the same as those of the officers. Buttons.

The buttons of the petty officers and gunners to be of the same pattern, but of black horn.

120. The tape trimmings of the white frock to be waved in the same manner as the braid on the coat sleeves of the officers. Trimmings.

121. All badges are to be of silver embroidery on the jackets, and of silver or white on the blue serge. Badges.

On the white frock they are to be blue.

122. The cap ribbon to have a crown and anchor in front, with the letters R.N. on one side of the anchor, and the letters A.V. on the other. Cap ribbons.

The crown and anchor and letters to be embroidered in silver on a black silk ribbon.

The letters to be five-eighths of an inch in size.

Correspondence and Returns.

123. All official correspondence from the Volunteer brigades except the correspondence of the officer-instructor in his capacity of instructor, is to proceed from the commanding officer, or to pass through him.

C.

Having explained the original design of the founders of the Naval Volunteer movement, and printed *in extenso* the regulations laid down by the Admiralty, it only remains to show with what degree of success the Naval Volunteers have passed through the early stages in the development of the force.

Report of
Sir Walter
Tarleton,
1877.

The Royal Naval Artillery Volunteers have been spoken of in the warmest terms, both by Sir Walter Tarleton and Admiral Phillimore.

The farewell report of Sir Walter Tarleton, 1877, concludes with the following observations:—

‘ Royal Naval Artillery Volunteers. ’

‘ I attach the last returns showing the strength of this force.

‘ The London brigade has shown much zeal and perseverance in acquiring a knowledge of the gun drill and small arms, and they have cheerfully submitted to privation and discomfort in going out in a gunboat.

‘ I attach the report of the lieutenant commanding the gunboat on the last cruise.

‘ I am of opinion that they would be found useful in the event of war in the defence of the estuaries, while in peace they serve as a connecting link between the Volunteer movement and the Royal Navy.

‘ The Liverpool brigade is increasing in number and efficiency under a new commanding officer and instructor.

‘ At Bristol the movement has never been popular, and unless more energy is shown, and more Volunteers enrol, it seems questionable whether the expense of maintaining the staff of instructors should be continued.

‘ An intimation to this effect to the commanding officer might stimulate further exertion.

‘ J. W. TARLETON,

‘ Vice-Admiral Superintendent Naval Reserve. ’

The report of Admiral Phillimore in 1878 was equally favourable:—

Report of
Admiral
Phillimore,
1878.

‘1 New Street, Spring Gardens, S.W. : February 20, 1878.

‘Sir,—In accordance with instructions from the First Lord of the Admiralty, I have the honour to report on the present condition of the Royal Naval Artillery Volunteers.

‘This corps was enrolled in accordance with the Act of Parliament in 1873 (36 & 37 Vict. c. 77).

‘The opinion of my predecessor on the Royal Naval Artillery Volunteers is given at page 7 of his confidential report, on quitting office, dated 18th October 1876:—“That they would be useful in the event of war, in the defence of the estuaries, while in peace they serve as a connecting link between the Volunteer movement and the Royal Navy.”

‘Since the date of this report the strength of the force has changed as follows :

	Strength in October 1876	Present strength
London Brigade, formed 1873, with batteries at Hastings and Brighton	383	384 ¹
Liverpool Brigade, formed 1874, with batteries at Southport, Carnarvon, and Bangor	205	206 ²
Bristol Brigade, formed 1874	60	112
Total	657	1,002

‘It will thus be seen that the movement maintains its position, and that at Liverpool it has developed itself very much.

‘Both at London and Liverpool the condition of the Brigade is excellent. The Volunteers drill with celerity and precision, and are extremely zealous. They cheerfully conform to discipline, and are desirous of improving themselves in every way when embarked for their annual drill.

‘I have not inspected the Bristol Brigade this year, but the Returns show a number of only 50 “efficient” against 62 “non-efficient.”

‘Though I concur generally in the views expressed by my predecessor, it is difficult to define the exact duties to which these Volunteers would be applied in case of war: much would depend upon the localities of the different corps. For instance, the detachments at Hastings and Brighton would not be likely to be called on

¹ 1876: 50 officers and men at Brighton. 65 officers and men at Hastings. 1878: 46 at Hastings. 55 at Brighton.

² 1878: 36 at Southport. 39 at Bangor. 71 at Carnarvon (not formed till after October 1876).

for the defence of the estuaries. They might assist in manning any batteries, whether on shore or afloat, near the coast. In some places they might supply the place of the Coastguard temporarily, if that force should be suddenly embarked. They might furnish guards at rendezvous and places of embarkation to preserve order. Many of them have become expert artillerymen.

‘There is one distinctive feature in the Naval Artillery Volunteers: they get no capitation grant; so they defray all the expenses of their own uniforms, and thus set an excellent example to all the seaports of men who learn the use of arms, and voluntarily submit themselves to discipline, in order that they may become more useful citizens in time of war by contributing in person and in purse to the defence of the coast.

‘I think the movement assists in making the Naval Service better appreciated and understood at certain places, and consequently increases the popularity of the Navy generally, which, if more seamen were required for ships of war, might be of great value in facilitating fresh entries.

‘I have, &c.

(Signed)

‘AUGUSTUS PHILLIMORE,

‘Admiral Superintendent.

‘The Secretary of the Admiralty.’

Report of
Admiral
Phillimore,
1879.

On the completion of his term of service as Admiral Superintendent of the Reserves, Admiral Phillimore addressed a gratifying note to the Compiler on the general condition of the Naval Volunteer force:—

Naval Reserves, 1 New Street, Spring Gardens, S.W.: November 14, 1879.

‘My dear Mr. Brassey,—I think you will like to see the copy of the letter I have written to Lord Ashley about the London Brigade of R.N.A.V.

‘I have in my farewell report to the Admiralty drawn their attention to the slow but steady increase of the force, thus:—

	In 1876	In 1879
London (including Brighton and Hastings)	383	444
Liverpool (including Bangor and Carnarvon)	205	572
Bristol	69	167
Total	657	1,183

All this without any capitation grant (and I think Jersey and the Isle of Man will each have their brigades in another year) tends to show clearly that there was room for the movement. The Duke of

Edinburgh is to relieve me on the 21st, so I must say my farewell to you from my official capacity.

‘Yours sincerely,

‘AUGUSTUS PHILLIMORE.’

The Royal Naval Artillery Volunteer movement may be regarded as a connecting link between the Navy and the civil population. In the ordinary duties of the service the Navy is necessarily kept apart from the main stream of the national life. The Navy wants the sympathy of the country. It gives us in return a share in its traditions, and the high examples of self-sacrifice, patriotism, and devotion, which we have before us, and shall do well to follow, in the lives of Nelson and the band of heroes by whom he was surrounded, and in the long succession of officers, who, without his opportunities of distinction, have spent their lives in loyal service of the country.

The admirable appearance of the Naval Volunteers at Windsor is an event so recent, that it does not fall within the scope of the present compilation, which is limited to a reprint of former publications. The views and the labours of the Compiler in his official capacity are necessarily of a confidential character. It will be enough for him to say that his interest in the Naval Volunteers cannot be weakened by his closer connection with the administration of the Navy.

D.

*Distribution
of prizes
H.M.S.
‘Eagle.’*

In 1889 the annual distribution of prizes in connection with the Liverpool Brigade of the Royal Naval Artillery Volunteers took place on board H.M.S. ‘Eagle.’ The following report of the proceedings is from the *Liverpool Daily Post*. Lieutenant-Commander E. S. Inman presided.

Lieutenant INMAN, in addressing the audience with regard to the work done by the corps, had pleasure in stating that it had been satisfactory, and equal to what had been done in previous years. As regarded numbers, the corps was at the present moment similar in strength to what it was last year, and the seeming absence of an increase might be accounted for by the fact that they had taken what were called ‘paper men’ off the list and had added real recruits; therefore, they were stronger rather than weaker. The actual detail of the work done had been very satisfactory. Their efficiency was equal, if not better, than what it had been in past years. He had great pleasure in thanking those who had given the prizes for competition, for they were dependent to a great extent upon their friends’ support in that respect. He was glad to say that the competition for prizes had been great, and that the members had turned up well for the various prizes. After referring to the great service Mr. Goschen had rendered in starting the Naval Volunteer movement, the speaker said if they could get those in high places to recognise that they could be of some importance as a defence to the port, there would be a better hope for their progress as a corps. The difficulty, however, was that they could not afford to leave their home in Liverpool for any length of time, but if an arrangement could be made whereby they should not leave Liverpool but assist in the defence of their own river, there would be no difficulty in procuring as many men as might be required as an auxiliary or help in the defence of the port.

After distributing the prizes, which were read out by Lieutenant Squire, R.N.,

Mr. BRASSEY, M.P., who was received with loud applause, addressed the corps. He said: This is the second time I have had the pleasure of seeing the Liverpool Brigade of Royal Naval Artillery Volunteers in my official capacity as your honorary commander. I have seen you at drill. I am to-day to distribute prizes to the most efficient members of the corps. More than ordinary interest attaches to the present occasion. We, the original promoters of the Naval Volunteer movement, cannot disguise from ourselves the fact that it is in a critical position, and has reached a turning-point in its history. We must either develop into a permanent, more numerous, and more widely distributed force, or we must go through the painful process of decay. It is now nine years since the Naval Artillery Volunteers were called into existence by the Admiralty, over which Mr. Goschen presided. The idea of a sea militia is of old date, and has always been popular, and when Mr. Goschen, in two speeches, the one delivered at Liverpool and the other at the Sailors' Home in London, made an appeal to the shipowners and to the seafaring and sea-loving population generally, to co-operate with the regular forces of the Navy, his appeal met with a prompt and hearty response. I had the honour of being asked by the pioneers of the Naval Volunteer movement in London to become the channel of communication with the Admiralty. We were met in a liberal and encouraging spirit. As a tentative measure, the Volunteers were permitted to go through some preliminary drill on board the 'President,' the drill-ship of the Naval Reserve in London. It was speedily established that they were thoroughly able to carry out what they had undertaken—to work naval guns and to man and arm boats. The necessary Act of Parliament was obtained, and with the assistance of Captain Codrington, now in command of the Steam Reserve at Portsmouth, to whose patience, tact, and sound judgment the success of the Naval Volunteers is largely due, we were finally constituted as an integral though subordinate part of the naval forces of the Crown. Our subsequent history must be briefly sketched. The Royal Naval Artillery Volunteers are now some 1,400 in number. Brigades have been established in London, Liverpool, and Bristol, with detached batteries at Brighton and Hastings, and at Carnarvon and Southport. The members of the corps have been thoroughly instructed by the highly qualified men appointed for that purpose from the 'Excellent.' They have embarked in considerable numbers in the three gunboats which have been annually placed at their disposal, and they have received the highest commendation from the Admirals Superintendent of the Reserves, Sir Walter Tarleton

Prospects
of the
Naval
Volunteer
movement.

Prospects
of the
Naval
Volunteer
movement.

and Admiral Phillimore, and from the lieutenants in command of the gunboats. Speaking on behalf of the Admiralty, I may say that we appreciate most highly the zeal, the public spirit, and the intelligence which have been displayed by Lieutenants Graves, Bell, and Inman, who have in succession held the command in Liverpool, and, indeed, by all the officers and men who have enrolled themselves in the ranks of the Naval Volunteers. Having referred to the more promising features of our past experience, I must make a frank acknowledgment that our exchequer is exhausted, and that we have to face an insurmountable difficulty in raising the necessary funds by casual and uncertain subscriptions. The same difficulty was encountered in the case of the land-service Volunteers. The first promoters of the Naval Volunteer movement, anticipating that the number required would be comparatively small, and knowing that they had enthusiastic friends behind them, declined to accept or to apply for any pecuniary assistance. Experience, however, has shown that the movement cannot be maintained elsewhere than in London without the aid of a capitation grant. In Liverpool the liberality of the local subscribers has been taxed to the uttermost, and the officers in command have been called upon to defray expenses on a scale which makes it impossible for any gentleman without ample resources to accept a commission. At Bristol the corps has never been able to reach the full strength of a brigade of five hundred men. At the outports it has been found impracticable to form even the nucleus of a harbour-defence corps without a subsidy. Under these circumstances, the public will not be surprised to learn that applications have recently been forwarded to the Admiralty from the officers in command of each of the Royal Naval Artillery Volunteer corps, praying for the assistance of a capitation grant. The proposal will receive full consideration; but no decision can be taken until the mixed naval and military committee, appointed to inquire as to the best means of defending all our commercial harbours, has made its report. If the Volunteers are recognised as an essential element in the defence of our coasts, the Government will be justified in granting them the small measure of assistance for which they have at last most reluctantly applied. The Naval Volunteer movement merits encouragement on many grounds. It is an additional link between the Navy and the civil population. The brave fellows who man our fleet are of necessity a class apart, and the Volunteers who are brought into close contact with them when under instruction, are the only members of the civil population with whom the blue-jackets are asso-

ciated while on active service. If it is an advantage to the Navy to be associated with the civil population, naval influences will be not less valuable to the civilians who join the Naval Volunteers. Discipline, self-sacrifice, and devotion to duty are the root and source of naval efficiency; and it were well for everyone of us to receive a training in such a school as the Navy. There are those who view with regret the growth and tenacity of the Volunteer movement. They think it keeps alive a military spirit. Such a result may be regretted by philosophers, but it will not be unwelcome to those who are responsible for the defence of the country. We are perpetually threatened, and to be prepared at all points is the best means by which war can be averted. It was truly said by Lord Palmerston that a country can never negotiate an honourable peace nor exercise a wholesome influence abroad unless men are impressed with the belief that under just provocation it can fight, and means fighting. A high state of civilisation is not without its attendant drawbacks. We should encourage everything which tends to infuse a manly spirit and vigorous habits into our sedentary existence. The rashness of the sportsman in the hunting field may rise into cool courage in the din of battle. If it were only as an athletic exercise for the young men in our seaport towns, I venture to think that the Naval Volunteer movement deserves support. But the drills and exercises of the Volunteers must be viewed in a more serious aspect. Limited as their sphere may be in the active operations of war, the assistance which the Naval Volunteers might be able to render in an emergency should not be undervalued. The recent reductions in the number of blue-jackets in the Navy have been explained in the House of Commons, and I only allude to the subject now in order to state that I see no possibility of an addition to the *personnel* of the Navy without a much more considerable expenditure than any Government is likely to propose. It becomes, therefore, a matter of importance to increase the strength and efficiency of our auxiliary forces. We must make the most of our Naval Reserves, and we certainly cannot afford to despise the services which the Volunteers are thoroughly capable of rendering in coast defence. Let it be remembered that every effective Volunteer sets free a blue-jacket, a marine artilleryman, or a marine, to man the fleets which must be maintained at sea to guard our communications and to fight our battles. I may be asked to advise as to the best policy for the Volunteers to pursue in the immediate future. I venture to say that there is no necessity for agitation. The Admiralty are in possession of your views. It is

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of the
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movement.

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of the
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movement.

obvious that their final decision as to pecuniary aid must depend on the report they receive from the Harbour Defence Committee, and that report must be materially affected by the evidences which the Volunteers afford of their capabilities. There never was a time in the history of the Volunteer movement when the duty was more imperative on every Volunteer to be regular in his attendance at drill and to do all in his power to make himself thoroughly efficient.

SECTION VIII.

STEAM NAVAL RESERVE.

STEAM NAVAL RESERVE.

HAVING dealt with the more general question of a supply of seamen and officers, our Steam Reserve cannot be entirely omitted from consideration. In a Parliamentary Paper on the Supply of Coals to the Navy allusions were incidentally made to the insufficient number of trained stokers in the Navy. Admiral Willes, in a report to the Admiralty as Commodore of the Reserve Squadron on August 16, 1870, made the following observations :—‘ The amount of smoke made by the Reserve Squadron during the late cruise might be attributed to bad stoking. I have for a long time studied the probable state of the engine-room in the event of a sudden war. So far as the ships of the Reserve Squadron are concerned, some few would have, in addition to the small number of stokers allowed them, some able stokers, although much out of practice, from the shore force, with the addition of raw hands from the Steam Reserve, whilst others would have nothing but raw hands in addition to the present nucleus. Ships in the Channel Squadron could not have more than one-half good stokers to hand, and on the outbreak of a war indifferent stoking would be the rule rather than the exception.’ Again, in the report of the Engineer-Assistant of the Admiralty on the trials of coal in Indian troop-ships, we are told that in the ‘ Serapis ’ half the complement of stokers were second-class landsmen, who had to be taught, and that this was also the case with the ‘ Crocodile.’ Admirals Elliot and Ryder, in their report on the designs of our ships of war, incidentally alluded to the unsatisfactory force of stokers in the Navy, of whom they say that they are not only insufficient in number, but also of very inferior physique. In the Crimean War, owing to the great demand for engineers who had had experience in driving high-pressure engines, many incompetent men were appointed. So it will always be when an emergency occurs, and there are no Reserves on which we can rely. It is true that in the event of war it is always possible to obtain a supply of engineers and stokers from the

mercantile marine by giving sufficiently liberal wages in the Navy. But, in order to attract men from the mercantile marine to the Royal Navy, the pay in the Royal Navy must be materially increased, in defiance, probably, of loud complaints on the part of shipowners, as to the unequal competition which they will suddenly be compelled to encounter. With the immense advantage that we possess in the great steam fleet of the mercantile marine, this country ought not to be exposed to the chance of a difficulty in obtaining engineers and stokers for the Navy in any emergency, however sudden. A Steam Reserve should, therefore, be formed, composed of men who should engage to serve in Her Majesty's ships when called upon to join the Navy in the event of a war. There are 3,500 engineers belonging to the French Navy, of whom, in times of peace, the most part are allowed to serve in merchant steamers of any country, and France would be enabled by this means to provide every ship of the Navy in time of war with engineers in full practice.

There is reason to believe that many stokers would enter the Reserve on the same terms as the seamen. They could have a certain amount of instruction in the use of arms, and when the seamen went out in the gunboat attached to the drill-ship, for target practice, the stokers could work the engines, under the direction of the engineers. During their four weeks' drill, they could go from time to time for instruction in the art of driving the engines, and would receive, according to their merits, first, second, or third class certificates.

SECTION IX.

***OFFICERS OF THE COAST DEFENCE
FORCES.***

OFFICERS OF THE COAST DEFENCE FORCES.

Officers of
Reserve.

WE need not anticipate a difficulty in finding officers to command our Naval Coast Volunteers. Many officers have been retired against their will under a recent Order in Council at the prime of life. It would be only just to afford them an opportunity of rendering further services to their country by giving them charge of the Reserves,—a duty which many would be happy to undertake for a small addition to their retired pay.

According to the provisions of the Order in Council of February 1870, for which Mr. Childers is responsible, the number of flag-officers on the active list of the Navy is to be reduced to 50; captains, 150; commanders, 200; and lieutenants, 600. Assuming that a considerable number of new appointments may be created in connection with the Naval Reserve, the staff of officers allowed under the Order of Council is more than sufficient for our peace requirements. It is painful to many officers to sever their connection absolutely with the Navy, even when they have no desire to serve unless in the emergency of war. They should be invited to enrol themselves on a reserved list, composed of officers who, in consideration of certain advantages in the rate of their half-pay, would consent to waive all further claim for employment during peace, but would engage to serve, whenever called upon to do so, in time of war. By this means, our resources for expanding the Navy would remain unimpaired; while officers, who were unable to find occupation outside their own profession, would command a better chance of obtaining employment.

Employ-
ment of
retired and
half-pay
officers in
Reserves.

The appointment of a staff of officers to command and organise the Reserves would be another useful application of the energy of our half-pay officers. It is certain that close and intelligent supervision by a permanent staff of inspecting officers would promote efficiency; while the personal intercourse between the officers and men would establish, in the seamen of the Reserve, a greater spirit of loyalty to the Navy, and create habits of discipline.

I am induced, in deference to the strong opinions of many naval officers, and specially to the views which, as I have been informed, were entertained by the late Lord Fitz-Hardinge, to abandon the idea of giving the command of the Royal Naval Coast Volunteers to the Coastguard, and making it a special and separate branch of our naval service. I abandon my first idea with the less reluctance, because, as I have already observed, I am satisfied that the drill and command of this force could be carried out efficiently, and at a trifling cost to the country, by half-pay and retired officers, who would be only too glad to devote their enforced leisure to the good of their country. I have been informed by retired officers that employment in connection with our coast defence service, even without additional pay, would be highly appreciated by many of their number. The necessity for keeping up a flow of promotion through the Navy has led to the enforcement of rules for compulsory retirement, which have come hardly upon numerous officers in the full enjoyment of health and strength, and animated by an earnest zeal in their profession. It would be easy to find a sufficient number of officers from the retired list qualified in every respect to command the Coast Defence Reserve, and only a trifling addition to the handsome pensions now given would be expected. Indeed, I am confident that the mere sense of being still connected in a useful capacity with the naval profession, instead of being unwillingly and for ever placed on the shelf, would be an immense gratification to naval officers who had been compelled to retire.

Lord Fitz-
hardinge.

A naval officer, who cordially approves the scheme herein set forth, informs me that at the age of fifty-one he was relieved by the bounty of the country from the misery entailed on him by the wretched half-pay of 10s. 6d. a day, supplemented by his small private means. But, for his retired pay of 465*l.* a year, he would have been only too glad to command a training ship under the Board of Trade; or, with allowances for a house, a horse, and travelling expenses, he would have been ready to command a district. In conclusion, my correspondent, a captain on the retired list, observes: 'I do not mean to say that I am fit for tropical service, or for a cruise in the winter off Brest, but I am qualified, nay, better qualified than I was twelve years ago, from sobered temper and experience, to train boys, and to deal with men of the Reserve Forces. I cannot but think the State should have some return for the liberal salary I receive, and which I should be only too glad to give.'

Letter
from a
retired
officer.

The formation of an able staff of superior officers, in connection with the Reserves, is the best and only guarantee for their efficiency.

Flag offi-
cers of
Reserve.

Ten years ago, when provision was made for Reserve forces numbering in the total 21,200 men, the highest appointment, in immediate connection with the Reserve, was that of Controller of the Coastguard, an appointment which was held by a post-captain in the Navy. Inspecting Officers for the Reserves would render valuable service.

Seeing that the post of Commander-in-Chief at each of the naval ports, an office which cannot be compared in importance with that of Commander-in-Chief of the Reserves, is always held, and very properly so, by an admiral of high rank, there was an obvious inconsistency in entrusting the superior command of the Reserves to one post-captain. That inconsistency has been removed by the appointment of an admiral to command the Reserves. With a larger staff of commanding officers the efficiency of the Reserves would be still more thoroughly secured.

Valuable results would follow from a closer and more continuous inspection of our Reserves for coast defence by experienced flag officers. The admirals in command of the Reserve should be constantly on the move, inspecting the scattered forces under their charge, and making themselves acquainted with all accessible points on the coast, and with the best means of defending them from attack by a combination of our naval and military resources. The flag commands in the Royal Naval Reserve and Coastguard Volunteers, and the Controllorship of the Coastguard ought to be regarded as among the very highest appointments, and should be given to some of the ablest admirals in the service. In the absence of supervision by officers of high rank, specially appointed for that duty, who could both effectually superintend the drill and discipline of the force, suggest improvements in its organisation, and supply a channel of communication with the Admiralty, in which both the men of the Reserves and the country could have confidence, the large outlay on our Reserves did not at first produce such a result as the naval service and the taxpayers might fairly have anticipated. A very different policy has prevailed in the organisation of the staff for our Volunteers on shore. An admiral sent on an occasional tour of inspection is not a sufficient substitute for an officer of equal rank especially devoted to the duty. An officer holding a high command in the Reserve would feel that his professional reputation was intimately involved in the success or failure of these branches of the *personnel* of the Navy; and he would be stimulated in the highest degree to bring all his experience and professional knowledge to bear upon the effectual execution of his important duties.

Mr. W. S.
Lindsay.

While the command of the Naval Reserve in active service would de-

volve principally on officers of the Royal Navy, we may confidently look to the merchant service to supply a large number of valuable officers. The late Mr. W. S. Lindsay, in referring to this subject, in his independent report as a member of the Manning Commission, said:— ‘There are now in the merchant service a large number of well-educated men, of a good social position. Since the passing of the Merchant Shipping Act they have been tested in navigation and seamanship as severely as naval officers before a public board. . . . The masters in the merchant service would become lieutenants in no way inferior to many of the officers now in the Royal Navy. . . . The formation of a reserve of officers, as well as of men, from the merchant service, to meet the emergency we have to provide against, would conduce materially to facilitate the raising of the necessary reserve of seamen. These officers of the Reserve would in fact become voluntary recruiting officers for the Navy.’

An important step has recently been taken to carry out the views expressed by Mr. Lindsay. In a speech delivered in 1872, Mr. Goschen said:—

‘There is nothing in which those connected with the Royal Navy are more interested than in the mercantile marine of this country, both as regards officers and men. I am sure it would be a source of the greatest satisfaction to all interested in the Royal Navy to see a close relationship established between that service and such institutions as the “Worcester” and the “Conway.” A wish has been expressed and put before the Admiralty that steps should be taken, by which we may utilise for the benefit of the public service those who have been trained on board those ships; and I am now very glad to be able to select a certain number of cadets from the “Worcester,” in order to make them midshipmen in the Royal Naval Reserve.’

Midship-
men of
Reserve.

The policy indicated by Mr. Goschen has been followed up by his successors, and new regulations have quite recently been issued. The Order in Council of June 28, 1880, runs as follows:—

Order in
Council,
June 28,
1880.

‘Whereas there was this day read at the Board a memorial from the Right Honourable the Lords Commissioners of the Admiralty, dated the 19th of June 1880, in the words and figures following, viz.:—“Whereas your Majesty was graciously pleased by your Order in Council of 15th October 1872, to establish the rank of midshipman in the Royal Naval Reserve, and whereas it has in our opinion become advisable to make provision for the promotion of the most deserving of these midshipmen to the higher rank of sub-lieutenant although not fully qualified for that rank under existing regulations, and for the removal from the list of the Royal Naval Reserve of those mid-

shipmen who have either failed to obtain their certificates in the mercantile marine suitable to their age, or to keep up their drills, we most humbly submit that your Majesty may be graciously pleased by your Order in Council to establish the following regulations:—

“1. Midshipmen Royal Naval Reserve who formerly passed through a course of training in the ‘Worcester’ or ‘Conway,’ to be eligible for promotion to the rank of sub-lieutenant on completing six years’ service in the Royal Naval Reserve, provided (a) that they hold master’s or chief mate’s certificates of competency under the Merchant Shipping Act, (b) that they are not in arrear in their drill and have obtained a certificate from the commander of one of the drill ships, that they are competent to instruct and drill men of the Royal Naval Reserve. (c) That they have followed the sea service as their profession throughout the time they have served as midshipmen in the Royal Naval Reserve.

“2. The names of midshipmen who fail to obtain these qualifications for promotion at twenty-five years of age to be removed from the lists of the Royal Naval Reserve, except in any special case to be judged by us, where prolonged service abroad is the cause of the failure to qualify under these regulations.”

‘Her Majesty, having taken the said memorial into consideration, was pleased, by and with the advice of her Privy Council, to approve of what is therein proposed. And the Right Honourable the Lords Commissioners of the Admiralty are to give the necessary directions herein accordingly.

‘C. L. PEEL.’

Short
courses in
gunnery.

It has been suggested that the efficiency of the mercantile officers for naval commands would be materially increased if the same privileges were given to them which are granted to the land-service volunteers. This could be accomplished by allowing officers to be attached to H.M.S. ‘Excellent’ or ‘Cambridge,’ in order to acquire practical acquaintance with their duties. In granting such facilities the Admiralty would be providing for the Reserves the same instruction which the military authorities afford to the Volunteer officers of the land-service when attached to a regiment of the regular forces.

In France it has always been considered an important object of naval policy to preserve a close connection between the Navy and the mercantile marine.

Comte de
Gueydon.

In his speech, on February 19, 1877, at the opening of the session of the Société des Études Maritimes, Vice-Admiral the Comte

de Gueydon enlarged on the importance of a reserve in the mercantile marine for the war Navy.

‘The importance,’ he said, ‘of the duties of merchant captains is not sufficiently appreciated in France. The merchant service has given to the country Jean Bart, Duguay-Trouin, and a host of illustrious names. It cannot be denied that something ought to be done to attract men of superior talent into a career which offers so many opportunities as the sea. Experienced officers are urgently needed whenever it may be necessary to fit out the fleet in reserve. Captains in command of large merchant ships are no longer fitted as in former days to take their place as lieutenants in armoured rams. Hence it is necessary to form a cadre of officers of reserve, for which officers should be eligible after one year’s service in the Navy; and on passing a suitable examination as a mark of recognition, officers of Reserve should be eligible for promotion to the rank of captain, having the relative rank of a colonel in the army, and lieutenant. They would be allowed to wear a uniform on occasions when officers of the Navy in the mail service are allowed to wear it.’

It may here be remarked that no encouragement has hitherto been given to shipowners, marine superintendents, or masters in the merchant service, to exert themselves to obtain recruits for the Reserves. If such persons would give a preference to Reserve men, when shipping crews; especially if, in those services which the seamen esteem the most highly—the great lines of mail steamers—only seamen of the Reserve were allowed to enter as able seamen: such a regulation would have an immense effect in stimulating enrolments in the Reserve. As an inducement to those on whose favourable opinion the Reserve depends so much, some reward should be given for the exercise of their influence. The most obvious reward should be a step of rank in the Reserve.

Similarly, with the view of stimulating the Registrars, on whom so much depends, to exert themselves to induce recruits to enter the Reserve, their services might be recognised by giving them the rank of honorary paymaster in the force.

Honorary
rank in
Naval
Reserve
to ship-
owners and
marine
superinten-
dents.

SECTION X.

COLONIAL NAVAL VOLUNTEER FORCE.

A LECTURE

DELIVERED BEFORE THE ROYAL COLONIAL INSTITUTE,
FRIDAY, JUNE 7, 1878.

COLONIAL NAVAL VOLUNTEER FORCE.

It is not surprising that the idea of organising a Colonial Naval Reserve should have been deferred to the present time. The growth of our Colonial Empire has been so rapid that the resources, out of which such a force could be created, have only lately been called into existence.

It has been remarked by Mr. Wilson, in his recent volume on the resources of modern countries, that none of the colonies were of great promise before 1845. Canada languished; New South Wales—then including Victoria and Queensland—was a feeble settlement, still troubled by a residuum of transported criminals; the Cape of Good Hope was almost Dutch. The total English population of the whole of our foreign possessions did not, in 1850, exceed 2,000,000. The population of these colonies has at least quadrupled in thirty years, and in some cases is tenfold what it was in 1845.

Growth of
Colonies.

Visitors to the Exhibition now being held in Paris will see abundant and gratifying proofs of the marvellous development of our colonies, and of their ability to provide adequate means of self-defence. The Australian Governments have wisely embraced the opportunity of showing to the world their varied and valuable products. From New South Wales we have copper, silver, lead, marble, tin, slate, and opals, wine—including all the varieties of the French and German vineyards—tobacco, and, perhaps most important of all, wool. From Western Australia we find leather, timber, silk, coal, lead, and wines. Victoria, which boasts of 800 varieties of trees and flowering shrubs, exhibits also coal, wines, and cloth manufactures. She reminds us, by means of pyramidal models, of the value of her productions of gold, and of the exceptional good fortune of certain adventurers. From the Cross Reef Mine 1,000,000*l.*, from the Long Tunnel 221,262 ounces, from the Port Phillip Company's workings 1,500,000*l.* have been extracted. Queensland exhibits malachite, gold, copper, cinabar, chrome, iron, plumbago, and antimony, sugar, coffee, wheat, maize, tobacco, silk, and wool. Lastly, South Australia exhibits copper, tin, vines, timber, leather, wool, and tobacco.

Paris Ex-
hibition.
1877.

The following table, prepared by the Registrar-General of New South Wales, gives the latest Australian statistics.

With such evidences of progress before us, we are justified in form-

AUSTRALASIAN

Statistical Return showing the Relative Positions and Aggregate

	NAME OF COLONY		
	New South Wales	Victoria	South Australia
Area in square miles	310,937½	88,198	380,070
Estimated mean population of 1879	714,012	888,500	255,087
Revenue of 1879	£4,475,050	4,621,520 ¹	£1,662,498
Proportion of revenue of 1879, raised by taxation	£1,272,721	1,730,088	£526,306
Rate of taxation per head of population	£1. 15s. 7½d.	£1. 19s. 4½d. ²	£2. 1s. 3d.
Value of imports for 1879	£14,198,847	£15,035,538	£5,014,150
Value of imports per head of the population	£19. 17s. 8½d.	£16. 18s. 5½d.	£19. 13s. 1½d.
Value of exports for 1879	£13,086,819	£12,454,170	£4,762,727
Value of exports per head of the population	£18. 6s. 6½d.	£14. 0s. 4d.	£18. 13s. 5d.
Total value of trade, imports and exports	£27,285,666	£27,480,708	£9,776,877
Value of trade per head of the population	£38. 4s. 3½d.	£30. 18s. 9½d.	£38. 0s. 6½d.
Miles of railway open, December 31, 1879	736	1,125	559
Miles of railway in course of construction, Dec. 31, 1879	286	74½	252½
Miles of telegraph lines open, December 31, 1879	7,517½	3,155	4,303½
Miles of telegraph wire open, December 31, 1879	12,426	5,736	5,934
Miles of telegraph in course of construction, Dec. 31, 1879:—			
Length of lines (miles)	497½	23	850
" wire (miles)	497½	47	1,010
Number of acres under crop in 1879	635,641	1,688,275	2,271,058
Number of horses in 1879	360,038	216,710	130,052
" cattle "	2,014,210	1,129,358	206,217
" sheep "	29,043,392	8,651,775	6,140,396
" pigs "	256,026	144,733	90,548
Estimated population on Dec. 31, 1879	734,282	899,333	259,287
Public debt on Dec. 31, 1879	£14,937,410	£20,050,753	£6,005,760
Rate of indebtedness per head of population	£20. 0s. 10½d.	£22. 5s. 10½d.	£25. 9s. 6½d.

¹ For the financial year ended June 30, 1879.

² This rate has been calculated according to the mean population of the financial year ended June 30, 1879 (878,243).

ing the brightest hopes for the future prosperity of the great Anglo-Saxon communities in the Antipodes. The page of their history is short, but they are a vigorous and energetic people, eager to embrace

COLONIES.

Importance of the Australasian Colonies, at the close of the Year 1870.

NAME OF COLONY					
Queensland	Tasmania	Western Australia	Total	New Zealand	Total for Australasian Colonies
600,520	26,215	1,000,000	2,474,940½	105,342	2,580,282½
214,180	111,208	28,668 ^a	2,211,655	448,124	2,659,779
£1,461,824	£375,367	£106,315	£12,792,583	£3,134,905	£15,927,488
£631,280	£236,404	£88,330	£4,485,108	£1,441,838	£5,927,036
£2. 18s. 11¼d.	£2. 2s. 6d.	£3. 1s. 7¼d.	£2. 0s. 8¾d.	£3. 4s. 4d.	£2. 4s. 8¾d.
£3,080,880	£1,267,475	£407,290	£30,004,198	£8,374,585	£47,378,783
£14. 7s. 8¼d.	£11. 7s. 11¼d.	£14. 4s. 1¾d.	£17. 12s. 8¾d.	£18. 13s. 9d.	£17. 16s. 3d.
£3,434,034	£1,301,097	£494,883	£35,533,730	£5,743,120	£41,276,856
£16. 0s. 8d.	£11. 13s. 11¾d.	£17. 5s. 3d.	£10. 1s. 3¾d.	£12. 16s. 3¾d.	£15. 10s. 4¾d.
£6,514,923	£2,563,572	£902,182	£74,537,928	£14,117,711	£88,655,639
£30. 8s. 4¾d.	£23. 1s. 11d.	£31. 9s. 4¾d.	£33. 14s. 0¼d.	£31. 10s. 0¾d.	£33. 6s. 7¼d.
503	172½	72	3,167½	1,171	4,338½
305	—	19¾	937¼	—	937¼
5,871	731	1,565¾	23,236¾	3,635	20,841¾
7,891	949	1,580¾	34,516¾	9,300	43,816¾
—	14	3½	1,388¼	—	1,388¼
—	14	7	1,575¾	—	1,575¾
101,052	156,184	65,491¾	4,917,701¾	2,218,782 ^a	7,136,483¾
163,083	24,578	32,411	926,872	137,768 ^b	1,064,340
2,800,633	129,001	60,617	7,300,126	578,430 ^b	7,878,556
6,065,034	1,834,441	1,109,860	52,844,898	13,009,338 ^b	65,914,236
64,686	38,312	20,397	614,702	207,337 ^b	822,039
217,851	112,469	28,668	2,251,890	463,729	2,715,619
£10,196,150	£1,786,800	£361,000	£53,937,872	£23,958,311	£77,896,183
£46. 16s. 0¾d.	£15. 17s. 8d.	£12. 11s. 10d.	£23. 10s. 0¼d.	£51. 13s. 3¼d.	£28. 13s. 8¼d.

^a Population on December 31.

^b Includes 1,405,018 acres after having been broken up, including such as in hay, but exclusive of 1,936,281 acres of grass-sown lands which had not previously been broken up.

^c According to the returns of March, 1878.

every opportunity afforded by a bountiful nature, and labouring valiantly in the spirit of their well-chosen motto, 'Advance Australia.'

The time seems now to have arrived when the colonies should be reminded of their obligations to provide for their own self-defence, and of their duty to take a part in those naval and military preparations, the cost of which should be borne in due proportions by the whole empire.

Necessity
for organ-
ising
means of
defence.

The necessity for the organisation of a Naval Reserve for the defence of the colonies has been recognised by many writers and by several gallant officers, who have delivered lectures on this subject in the theatre of the Royal United Service Institution. The brothers Colomb have been among the foremost in urging the need of such a force. They have shown what are the strategical points which are of the most vital importance to the integrity of the British Empire, and have earnestly recommended the appointment of a Royal Commission to examine the subject.

Lieut.
Eardley-
Wilmot.

In his essay selected for publication by the judges appointed to award the gold medal of the Royal United Service Institution, Lieut. Eardley-Wilmot insists very earnestly on the question of colonial defence:—

'Though England has never carried on a defensive warfare, in so far as the Navy is concerned, but has always exhibited a vigorous offensive movement as the best defence, yet in the contingency of an enemy's force eluding our vigilance and appearing off any of our possessions, there should exist some defensive organisation to offer a successful resistance.

'I am afraid that few of our colonies possess this, and also that we were somewhat hasty in withdrawing our troops till such had been assured.

'British Columbia and Vancouver's Island would be practically helpless in case of attack, for six years ago, when I was stationed in the Pacific (and the state of things is, I think, still unchanged) there was not a single fortification, or gun mounted. . . . We must endeavour to provide something out of the materials at hand. A country like Canada has great resources in this respect. An extended frontier and vast fisheries give her a seafaring population numerically large. Here is the foundation of a splendid Naval Militia. Give them training, and you have a reliable force in time of need. But before dealing with this part of the subject, it is necessary to determine—1st. What points are to be strengthened; 2nd. In what manner they shall be defended.

'For the defence of colonial harbours we require vessels carrying

the heaviest guns, and protected by armour-plating of average thickness. Attached to these vessels should be a certain number of gun-boats, carrying one heavy gun, with sufficient beam to give a steady platform, without aiming at great speed, a quality not essential to harbour defence.

‘Furthermore, torpedoes must be largely made use of. To supply the men to work these various weapons, I would suggest that our principal colonies have a small standing Navy, just sufficient to keep the ships in order and for training, and that a Reserve be formed, similar to our own Naval Reserve.

‘It is certain, however, that little can be done without material assistance from this country in some shape; and we could well afford a certain sum annually for such an object, in addition to turning over to our colonies guns and ships that we no longer require.’

Nothing has been done in the line indicated by these suggestions, and we find ourselves at the present moment contemplating the possibility of war, and utterly unprepared with the means of defending the important outlying members of the empire by those local forces which might so easily have been organised. Readers of the papers published in the *Nineteenth Century* will remember the imaginary but very forcible description, recently given by Sir Garnet Wolseley, of a Russian squadron performing a cruise of circumnavigation, making war on all our most valuable settlements, and winning a series of inglorious triumphs by levying black mail on rich seaports which could offer no resistance. It would, perhaps, be found more difficult to carry out such a series of operations than to describe them with the ready pen—which Sir Garnet so well knows how to use—but the bare conception of such a state of things ought to be unendurable alike to the people of the mother-country and of her dependencies.

These recommendations neglected.

From an imperial point of view, the best defence of the colonies consists in a powerful Navy; and it is because the naval service is constituted in part for the defence of the colonies that we may reasonably claim for all our dependencies contributions in equitable proportions, to be mutually and amicably determined, towards the naval expenditure of the country.

The latest tables, showing the progress of British mercantile shipping, give the total tonnage of the mercantile navy of the British Empire at 8,133,837 tons, and the tonnage of the United Kingdom only at 6,336,360 tons. The difference between these amounts (1,800,000 tons) represents a total tonnage for the colonies but slightly inferior to the combined tonnage of the French and German Empires.

Colonial naval resources.

The statistical tables, which have recently been presented to Parliament, contain gratifying evidences of the rapid increase in the tonnage of our colonial shipping. I give a few figures to show how widely distributed and elastic are the resources from which our Imperial Navy might be recruited, if Naval Reserves were organised, as they ought to be, in our colonial possessions.

Tonnage of Vessels on the Register.

Colony		1871	1873	1875	1876
Victoria . .	{ Steamers . .	9,608	10,622	12,656	
	{ Sailing vessels .	52,970	55,088	61,228	
Port Adelaide .	Total tonnage .	17,048	22,361	22,866	
Tasmania . .	{ Steamers . .	2,422	3,135	2,773	
	{ Sailing vessels .	15,125	14,894	15,544	
New Zealand .	Total . .	27,107	30,035	42,025	
Canada . .	{ Steam . .	—	6,783	—	7,192
	{ Sailing . .	—	1,073,718	—	1,280,893

Queensland.

		Total tonnage		Total tonnage
1873	British	Entered 170,173		Cleared 160,476
"	Foreign	" 5,900	"	6,876
1875	British	" 390,069	"	302,703
"	Foreign	" 5,165	"	6,245

It must be evident that the owners of colonial shipping will be quite able to contribute their share of the cost of defending the harbours from which they trade.

Hitherto the colonies have enjoyed complete exemption from the burden of military and naval expenditure. In an article on 'The Defence of our Empire,' in the July number of *Fraser's Magazine*, Mr. Baden-Powell gives the following table, showing the relative positions of the Spanish colonists in South America, and of the more fortunate inhabitants of the British colonies.

The Colonial Governments are now beginning to consider the question of local defence, and in one or two instances they have provided low freeboard ironclad turret-ships for that purpose. Victoria has lately voted a sum of 350,000*l.*, together with an annual outlay of 73,000*l.*, to provide ships, artillery, torpedoes, and rifles for the local defence. New South Wales has voted a like sum for the same object. The colony has formed a Volunteer Naval Brigade of 250 men, the annual expenditure on this little force being 3,916*l.* In the Canadian Dominion, a committee appointed by the Royal Halifax Yacht Club, in a report dated April 14, 1873, strongly recommend the organisation of a Naval Reserve, a Coastguard to protect property in the event of shipwreck, and a Lifeboat Institution.

Preparations
already
begun.

Country	Revenue	Expenditure on Army and Navy	Population
	£	£	
Chili	3,800,000	600,000	2,000,000
Brazil	12,000,000	2,500,000	10,000,000
Argentine Republic	4,300,000	1,150,000	1,800,000
Bolivia	600,000	390,900	1,700,000
Colombia	3,000,000	160,000	800,000
	23,700,000	4,800,000	16,300,000
North America	4,700,000	—	4,000,000
West Indies	1,650,000	—	1,200,000
Cape	2,820,000	—	1,100,000
West Coast	230,000	—	(200,000 white) 630,000
Australasia	16,000,000	—	(1,500 white) 2,500,000
Straits and East	2,500,000	—	3,200,000
Gibraltar, Malta, &c.	280,000	—	180,000
	£27,930,000	—	12,810,000

These preliminary and spontaneous efforts justify the presumption that the colonial governments would be fully prepared to bear their share of the expenditure required for any complete scheme of naval organisation and defence, and we may pass on to consider what kind of force would be most useful for colonial service.

No practical difficulty need be anticipated in raising a Naval Reserve in the colonies. If it be intended to provide the means of manning seagoing ships, the Naval Reserve, which has been formed for the defence of the mother-country, presents a model for imitation. If coast and harbour defence alone is attempted, the system of organisation adopted for the Royal Naval Artillery Volunteers may be followed with advantage.

The most effective means of defending the larger ports would consist in ironclads or turret vessels rather than in forts. Captain Colomb, R.N., has urged, in his prize essay, that the main object of our naval policy consists in the maintenance of our communications by sea, and that our coaling stations abroad are the principal strategical positions which it is essential to guard. He argues that this object will be best attained by the maintenance of an adequate seagoing fleet, charged with two great defensive functions: (1) that of keeping the enemy in his own ports; (2) that of keeping open the great sea routes to and from the heart of the empire. He considers that this duty can only be performed by seagoing vessels, and that the building of powerful ships which are not fully seagoing, and which are more or less incapable of maintaining the ocean communications of the

Plans of
Captain
Colomb,
R.N.

empire can only be justified on the assumption that the chief danger to be apprehended lies in a successful attack on our harbours.

If our enemies are to career at will across our lines of communication, while we guard their terminations at head-quarters, what, he asks, will be left us to guard? He puts much faith in the seagoing fleet resting on the naval station as a protective force, and condemns with steady design the idea of the harbour defence ship. Such vessels are every whit as likely to be withdrawn as the seagoing ship, when they are wanted; and the only result is that you build a bad seagoing ship, when, had you never considered harbour defence, you would have built a good one.

Captain Colomb throws the local home and colonial harbour defence entirely on forts, and the stationary and locomotive torpedoes. The supplemental local harbour defence corps is to consist of Volunteer torpedo men, whose functions will be of a nature peculiarly adapted to the superior education and undoubted skill and daring of the men, who would be enrolled in such bodies.

The Imperial and Colonial Governments should combine to create a fleet of seagoing ships, which should be kept in reserve in the harbours on the Australian station.

Australian
dockyard.

It has been suggested by Captain Colomb, R.M.A., that a dockyard in the Australian colonies has become almost as essential as the dockyards at home. He suggests that such an establishment should be formed at Sydney or Melbourne. Captain Colomb urges that, with our remaining dockyards, and the boundless resources of our private trade, we should be abundantly able to provide for the construction of new ships, and for the repairs of the Navy, even in times of the most pressing emergency: while, on the other hand, the growing importance of the Russian Navy in the Pacific, the extension of British trade over most of the islands in the vast ocean, and the great distance which separates our Australian territories from the mother-country, make it highly desirable to establish a dockyard in that part of the world. It is to be presumed that some contribution would be obtained from the local governments towards the expenses of such a dockyard, if established in their midst. The valuable resources it would afford to the mercantile marine would present an additional inducement to the colonies to make a contribution towards its maintenance.

Lieutenant Wilmot, in his essay, points out the necessity of having a dock capable of taking in a large ironclad on every station. We continually feel this want at the present time. How much more should we do so in the time of war?

Torpedoes and torpedo boats should be provided for harbour defence. The colonial governments should man the seagoing ships stationed in their own harbours with their Naval Reserves, and they should provide the *personnel* necessary for harbour defence by the organisation of corps of Naval Artillery Volunteers, after the model of those which have been successfully established in London and Liverpool.

The number of seagoing ships and torpedo boats and the forces of Naval Reserves and Naval Artillery Volunteers which would be necessary to man them, is a subject worthy of mature examination by a Royal Commission. Such a commission should include, not only officers of acknowledged capability to deal with technical questions, but representatives, who should be authorised to express the views of the colonists, with reference to the proportions in which they would be prepared to contribute to the expense.

The scheme for the defence of the empire must be matured by a Royal Commission.

I wish to insist emphatically on the importance of the work that would devolve on such a commission. We cannot conceal from the world the wealth accumulated in the colonial capitals, all of which lie on the seaboard. The inhabitants possess the courage and the resources necessary to repel an attack. But these places are at present defenceless. Floating and stationary defences cannot be designed, a Naval Reserve or Militia cannot be created, without naval and military advice. The colonies have no body of officers to assist them in such a task. It is for the mother-country to take the initiative, in the discharge of the urgent Imperial duty of preparing a scheme for the mutual self-defence of all the dependencies of the empire.

The defensive preparations already made in certain colonies will be appreciated as evidences of a gallant and patriotic spirit; but it is obviously impossible that merely local forces can be equal in point of efficiency to the Imperial Navy. Of their difficulties in this regard the colonial governments are fully sensible. Mr. Baden-Powell, who has lately returned from a prolonged visit to the Australian colonies, in the article in *Fraser's Magazine*, to which I have already alluded, refers to the difficulty of organising a Colonial Navy. He tells us that—

Colonies cannot create efficient naval forces without assistance from Royal Navy.

‘When Sir W. Jervois recommended the men of Sydney to institute an ironclad, the wise men among them saw that the true course was for them to pay the imperial authorities to supply them with an ironclad and crew inspired with the discipline, trained with the skill, and equipped by the progressing knowledge, which is attainable only in “large establishments.” It is a fresh acknowledgment of the

old truth "division of labour." The question was ably represented in the colony at the time, in the leading Sydney newspaper:—

“A spasmodic alliance of colonial navies, each navy consisting of one ship, each commander equal in rank to the others, and each colony jealous of the rest, would not be a very formidable combination for a bold, decisive, and dashing enemy to deal with. It would cost the colonies no more to have their naval defence under imperial than under local control, while they would *get much more for their money in the shape of security*; and if such an arrangement would be really the best in the interest of colonial defence, would it not also be best in the interest of the Empire, which is not unconcerned in having its colonies well defended? The question is deserving of very serious consideration, because behind it lies the application of the same principle to our land forces. What is true of ships is true of forts; what is true of blue-jackets is true of red-jackets.”

‘The colony of Victoria has already given practical proof of these assertions. The colonel in command of her land forces has remarked officially on the inevitable inefficiency of the arms and equipments, and the difficulties of teaching new drills with a force so small in numbers. And with regard to the powerful turret-ship “Cerberus,” the officers of the Royal Navy, called in from time to time to inspect her, have pointed out the danger of entrusting so elaborate an engine to any but skilled hands. Her efficiency, for instance, would be greatly marred in the present day, had she no officer on board trained in the latest developments of torpedo warfare.’

Proposed
organisa-
tion of a
Canadian
Naval
Reserve
an illustra-
tion of
what
might be
done in
other
Colonies.

I am not competent to enter into the details of such a scheme as the Royal Commission which I recommend would be enabled to prepare. A degree of local and professional knowledge, to which I make no pretensions, and which, indeed, cannot be combined in any individual, would be required in order to prepare a satisfactory plan. As an example of what might be done, I will, however, venture to refer to some notes on the formation of a Naval Reserve in Canada, put together after visiting the ports in the Gulf of St. Lawrence in 1872.

It is believed that in the Canadian Dominion there are not less than 87,000 seafaring men. In 1872, about 1,000 decked vessels and 17,000 open boats, manned by 42,000 men, were employed in the fisheries alone. The recently published tables give the most recent information as to their actual condition:—

Statistics of the Fisheries of the Dominion of Canada in the year 1875.

	Vessels employed	Men	Boats employed	Men
Ontario	11	46	828	2,322
Quebec	134	550	4,625	9,090
New Brunswick	235	1,475	3,061	6,369
Nova Scotia	615	5,813	8,619	17,906
	995	7,884	17,733	35,687

Total number of men, 43,571.

The value of the produce of the fisheries of the Dominion is given as follows :—

	£
Ontario	94,415
Quebec	332,137
New Brunswick	505,761
Nova Scotia	1,161,220
Prince Edward's Island	62,276
Newfoundland	1,325,035

The statistics of the fisheries as to boats and men employed are not given for Prince Edward's Island and Newfoundland. The relative value, however, of the produce justifies the assumption that the number of fishermen cannot fall short of the figures quoted for Nova Scotia and Ontario. It is stated in the Annual Report of Governor Hill for 1872, that about 10,000 men were engaged in the seal fishery of Newfoundland. We may therefore add to the numbers already given not less than 25,000 men employed in fishing on the coasts of Newfoundland and Labrador, which will bring up the number of hardy fishermen in our North American possessions to a total of not less than 68,000 men.

In a lecture delivered at the Royal Colonial Institute, on February 4, 1873, M. Bourniot, a member of the Canadian Senate, remarked that, 'In the men that sail the fishing fleets of Canada we see the elements of a very powerful marine, which will be found invaluable in times of national danger. It may be estimated that the total strength which the fisheries employ throughout all British North America is composed of some 70,000 men.' M. Bourniot was of opinion that there was no reason why training ships, supported by the local governments, should not be started in the colonies if the system were found to work well in the United Kingdom.

If we have done something to prove how manifold are the resources of an empire on which the sun never sets, by transporting

7,000 natives of India to our island fortress in the Mediterranean, should we not achieve a far greater thing if a force of 70,000 seamen of our own race and language were enrolled as an Imperial Naval Reserve in our North American dependencies? To use a telling motto attached to a noble picture by a gifted modern English painter, 'It might be done, and England ought to do it.'

To return, however, to the details of organisation.

The climate of Canada and Newfoundland, throughout their long winter season, is so severe that it is impossible for fishermen to follow their regular vocation. The long interval of enforced idleness during winter would afford an admirable opportunity for regular attendance at drill, without interfering with other lucrative employment. A vigorous effort should be made to enrol these colonial fishermen in the Naval Reserve of the British Empire. They are thoroughly inured to the hardships of the sea by the severe weather which frequently prevails on their native shore. They are among the most loyal and devoted subjects of the British Crown. There would be no difficulty in giving to the fishermen of Newfoundland and the maritime provinces of the Canadian Dominion an opportunity of embarking for their annual drill at a port easily accessible from their own homes. A vessel should be commissioned specially for the purpose of training seamen, who have joined the Naval Reserve from Newfoundland, from the ports in the Gulf of St. Lawrence, and from Quebec, Montreal, and other places on the great river. The vessel should be of the corvette class, having a covered deck, in which the battery of guns would be placed. In such a vessel the drills might be carried on with regularity in the most severe weather. The drill ship would be stationed, during midwinter, at St. John's. The harbour is admirably sheltered, and a large population of fishermen is congregated in the town and its vicinity. During a portion of the winter the drill ship should be moved to other points on the coast, where the fishermen are settled in large numbers. Thus the members of the Colonial Naval Reserve would have an opportunity of going through the annual course of drill, without being exposed to the hardship of a long sea voyage to St. John's in their small fishing boats in midwinter. Along the coasts of Newfoundland there are numerous admirably sheltered harbours, which are rarely frozen up. An anchorage might be selected for the training ship both in Placentia Bay and in Trinity Bay, perfectly secure, and easily accessible to the large numbers of British seafaring men dispersed along those distant shores. As the spring approached, and the navigation was opened in the Gulf of St. Lawrence, the ship could

proceed from harbour to harbour along the southern shores of the Gulf. At Sydney, Charlottetown, and Gaspé, many seamen could be enrolled for the national Reserve. It should be arranged that the drill ship should visit the harbours mentioned sufficiently early in the season to enable the seamen sailing from those ports to go through their annual drills before the navigation of the St. Lawrence was fully open. The Reserve men might thus have the opportunity of attending on board the training ship, without suffering the serious inconvenience, which would be felt, if they were taken from their employment afloat in the season of open navigation. Another similar training ship should be stationed at Halifax, which should visit the numerous harbours on the coast of Nova Scotia and in the Bay of Fundy, in the winter season, when multitudes of fishermen are compelled to remain on shore in consequence of the inclemency of the weather.

We have not neglected to avail ourselves of the services of our colonial population for the purpose of increasing our military resources. We have enrolled large bodies of men belonging to races distinct from our own. There can be no sufficient reason for neglecting to recruit for the Navy among the vast numbers of loyal Englishmen, whose splendid spirit of enterprise and adventure have carried them far away from their native shore to settle on the coasts of our Canadian Dominion.

This was the policy recommended by Lord Elgin, when, as Governor-General of Canada, he argued with so much force on the advantages to England and her colonies of an intimate union between them. 'Is the Queen of England,' he wrote, 'to be the sovereign of an empire, growing, expanding, strengthening itself from age to age, striking its roots into fresh earth, and drawing new supplies of vitality from virgin soils? Or is she to be, for all essential purposes of might and power, monarch of Great Britain and Ireland merely?'

The establishment of a Naval Reserve in our North American colonies is not only to be desired as a means of adding to our naval strength for imperial purposes, but also for defending the colonies themselves. All our colonies, including India, should have a defensive force of their own. Organisation beforehand is essential to success in war. By the bestowal of infinite pains on her military system, Prussia, which seemed for ever fallen after the battle of Jena, turned the tide of fortune in 1815, and, after the campaigns of 1866 and 1870, has become the greatest power of Central Europe.

It is one of the main recommendations of the scheme which I

Necessity
for preliminary
organization.

Great
expendi-
ture not
required.

have advocated on this occasion, that it need not involve the country in a lavish expenditure. It is well to prepare in advance plans of earthworks, to be thrown up when required, and to organise corps of Naval Volunteers. It does not follow that we should undertake the construction of the extravagant fortresses that surround our arsenals at home, or withdraw a single man from the well-rewarded labour market of the colonies. To build fleets and forts, and to maintain armies in every dependency of the Crown, would be an exhausting and an unnecessary effort. I approve the language held by Sir Robert Peel in 1850, when he said: 'I believe that in time of peace we must by our retrenchment consent to incur some risk. I venture to say that if you choose to have all the garrisons of all your colonial possessions in a complete state, and to have all your fortifications secure from attack, no amount of annual expenditure will be sufficient to accomplish your object.'

Since the date of Sir Robert Peel's speech, the noble Volunteer movement, one of the most honourable features in the recent history of this country, has been originated. A quarter of a century ago, the voluntary submission to drill and discipline of large masses of men, in numbers far exceeding those enrolled in the regular army, was not anticipated by British statesmen. By the extension of the Volunteer movement, garrisons can be maintained in the largest fortresses and in the most distant outposts, without adding in any appreciable degree to the charges on the imperial and colonial revenues.

England
can supply
officers.

The mother-country could readily furnish a staff of officers and instructors for the purpose of training the Colonial Naval Reserves. The number of officers required must depend on the strength of the force which it is deemed expedient to raise. In whatever numbers they may be wanted, they can be supplied from the ranks of those who have retired from the active list, or who are for the time being on half-pay.

The presence of a body of naval officers in our colonies will form a valuable link with the United Kingdom. They will carry with them the spirit of discipline and devotion to their country, which they have acquired from service in the Navy, and they will help to keep alive its illustrious traditions in those young communities, in which it is so important to create a high tone of morality and conduct. The example of her great men is the most valuable inheritance of a nation, and in the career of many of our sea officers the highest moral excellence has been combined with dauntless bravery and skilful seamanship.

That the Navy of our own time contains many brave men, prepared to serve their Queen and country in the spirit which animated Lord Nelson, we cannot doubt. It will be remembered how the gallant Burgoyne refused to enter the boat in which the sole survivors of the crew of the 'Captain' were saved. Humanity to the savage and fortitude in death were conspicuously illustrated in the closing hours of Captain Goodenough. But the occasions which brought out the high qualities of Lord Nelson are happily rare. The annals of a nation must be long, in order to furnish many examples equally illustrious. Our share in the honour, which belongs to the descendants of such men, is a privilege of high value; and it will surely be one of the strongest inducements to the formation of a Colonial Naval Reserve, that a link will thus be created with a Navy possessing the splendid traditions which belong to the British service.

In considering a project for a Colonial Naval Reserve, it is essential to determine to what extent the direct intervention of the Imperial Government will be required. Among a certain school of politicians it will be considered that local defence is a task which must be left entirely to the colonial governments. They think that the colonies are quite able to take care of themselves; that, man for man, the colonists are better off than the population of the mother-country; that it is the duty of our statesmen to rear up young and vigorous communities in habits of self-dependence, and to bring home to their people a sense of their obligation to make sacrifices for public objects, and to share with the mother-country the burdens of military preparations. They think that the influence of the Anglo-Saxon race upon the progress and civilisation of the world will be equally beneficial, whether we live under separate governments or remain united in our allegiance to the throne of these realms. In either event, Mr. Bright once said: 'It would be the greatest pride and the highest renown of England that from her loins have sprung a hundred—it may be two hundred—millions of men, who dwell and prosper on that continent which the grand old Genoese gave to Europe.'

Relative contributions of the mother-country and colonies.

Arguments not less convincing have been urged on the other side. The policy of a federal union between the mother-country and the colonies had a warm advocate in the eminent statesman, Earl Russell, who has lately been taken to his rest. In his *Recollections and Suggestions*, he says: 'It may be a matter of doubt whether or no to build up a colonial empire. But it is evident that if Great Britain gives up her supremacy from a niggardly spirit of

Earl Russell.

parsimony, or from a craven feeling of helplessness, other Powers will soon look upon the Empire, not with the regard due to an equal, as she once was, but with jealousy of the height she once held, and without the fear she once inspired. To build up an empire extending over every sea, swaying many diverse races, and combining many forms of religion, requires courage and capacity ; to allow such an empire to fall to pieces is a task which may be performed by the poor in intellect, the pusillanimous in conduct.'

Views of
Mr.
Froude.

The advantages of a Pan-Anglican Confederation were forcibly stated by Mr. Froude in the second series of *Short Studies on Great Subjects*.

No portion of Mr. Froude's argument is more telling than that in which he insists on the fatal influences which must ensue, when an excessive proportion of the population become inhabitants of enormous cities.

'Athens,' he reminds us, 'lost her dependencies, and in two generations the sun of Athens set. The armies which made the strength of the Roman Republic were composed of small freeholders of Latium, and afterwards of Italy. When Rome became an empire, the freeholder disappeared, the great families bought up the soil and cultivated it with slaves, and the decline and fall followed by inevitable consequence. Tyre, Carthage, or, if these antiquated precedents are to pass for nothing, Venice, Genoa, Florence, and afterwards the Low Countries, had their periods of commercial splendour. But their greatness was founded on sand. They had wealth, but they had no rank and file of country-bred men to fall back upon, and they sank as they had risen. In the American civil war, the enthusiastic clerks and shopboys from the Eastern cities were blown in pieces by the Virginian riflemen. Had there been no Western farmers to fight the South with men of their own sort, and better than themselves, the star banner of the Confederacy would still be flying over Richmond.'

Mr. Froude cannot contemplate the confinement of the English nation within these islands, with her increasing manufacturing population, and not feel a misgiving that we shall fail in securing even those material objects to which our prospects are to be sacrificed. With the assistance of the State he would send our unemployed multitudes to cultivate the virgin soil of our colonies.

If the policy advocated by Mr. Froude be right, the vast tracts of unsettled land within the limits of our colonies afford an ample field for future emigration from our shores. Mr. Giffen remarks that the productive area of the colonies has much increased during the five

years 1871-5, but is still very insignificant as compared with their enormous acreage. The area under cultivation (including sown grasses) amounts in Australia to about 10,000 square miles out of a total of more than three millions, and in the Cape of Good Hope to less than 1,000 square miles out of a total area of nearly a quarter of a million.

Mr. Froude, in the passages quoted, gives expression to views very generally shared by a school of politicians who are in favour of a closer connection with the colonies. They are anxious to promote a federal union of all the members of the British Empire. They wish to arrive at a mutual agreement on all questions of tariffs; and, with a view to concerted action in imperial questions, they are in favour of giving to the colonies representatives who should sit in the great council of the Empire at its seat of Government. In consideration of the protection afforded by the fleet, they are prepared to recommend a contribution from the colonies to the naval expenditure of the country.

Policy of
federation.

In his volume of *Recollections and Suggestions*, Earl Russell gives a sketch of the arrangements which might be made for carrying into effect a policy of confederation. A congress, representing Great Britain and her dependencies, should be convoked from time to time. The metropolitan State might promise protection to the colonies; and, on the other hand, a contribution of three or four millions to our army and navy estimates might be granted by the colonial parliaments, and an engagement might be taken not to charge more than 10 per cent. *ad valorem* on British produce and manufactures; or they might defray the expense of the aid afforded, and not interfere with the discretion of the British commanders.

Earl
Russell.

In the views of those able advocates of confederation, from which I have thus freely quoted, I generally concur, and I see additional evidences of their truth in the most recent incidents in our political experience. As Mr. Grant Duff has truly said, it is almost impossible for this country, under a popular representative Government, to pursue a satisfactory course in its relations with foreign countries. The greater number of those who take a lively interest in public business concern themselves rather with domestic questions than with foreign policy. Being without knowledge, they arrive at hasty conclusions, and every new incident that occurs produces a corresponding change in their opinions. Hence it is that our foreign policy is inconsistent and uncertain; that we disappoint allies in whom we have raised expectations, and make sacrifices for unattainable or unworthy objects.

Colonial
policy
more con-
sistent
than our
foreign
policy.

The Eastern Question once disposed of, it is my earnest hope that the attention of British statesmen may be directed rather to the object of drawing the colonies and the mother-country more closely together than to continental affairs.

In our relations with other nationalities we excite jealousy by our prosperity. Although singularly unselfish and unaggressive, our country is not greatly loved abroad. On the other hand, Old England, as their mother-country, still retains the warm affection of her colonies. Our Government may show a chilly indifference to their concerns, but England is still the 'home' of all English-speaking people; and the identity of religion, history, laws, and literature unites together every member of the family by bonds more enduring than the protocols and treaties, however valuable they may be, which are negotiated with foreign nations.

The arguments in favour of a cordial co-operation of the United Kingdom with the colonies in measures of mutual self-defence have been repeated by several able writers in recent publications. I may specially refer to Captain Colomb, Sir Julius Vogel, and the author of a paper on *England and her Colonies*, which appeared in *Fraser's Magazine* in January. We are reminded of the value of the colonies to the mother-country for the inevitable development of the British population, and as the main source of our maritime prosperity. While foreign countries are steadily determined to exclude British industries from the markets over which they exercise control, the value of the colonial trade becomes increasingly manifest; and, while we derive these advantages from our vast colonial connection, it is obvious that, in proportion to their own prosperity, the colonies are bound to take their share in defending the Empire. It is to be regretted that these obligations were not more strictly defined at the time when the privilege of self-government was conceded.

Earl of
Beacons-
field.

In his speech at the Crystal Palace, in 1872, Lord Beaconsfield said: 'Self-government, when it was conceded, ought, in my opinion, to have been conceded as part of a great policy of imperial consolidation. It ought to have been accompanied by a military code, which should have previously defined the means and responsibilities by which the colonies should have been defended, and by which, if necessary, this country should call for aid from the colonies themselves. In my opinion, no Minister in this country will do his duty who neglects an opportunity of resuscitating as much as possible our Colonial Empire, and of responding to those distant sympathies which may become the source of incalculable strength and happiness to this land.'

In conclusion, I revert once more to the importance of an inquiry by a Royal Commission as a necessary preliminary and preparative to the adoption of a complete and practicable scheme for the defence of the British Empire. The nature and distribution of the forces required, whether consisting of *matériel* or *personnel*, whether naval or military, the amount of the expenditure which would be involved, and the fair appropriation of charges as between the mother-country and the colonies, are questions which can only be determined after careful inquiry and deliberation on the spot, and with a fulness of knowledge which can only be secured by the combined labours of a Royal Commission. We have but recently been relieved from the apprehensions of war. Public attention has been drawn to the importance of securing our commerce from interruption. If the Government can be induced to institute the proposed inquiry, they will render a service, which will be appreciated, both at home and on the furthest confines of the wide dominions of the Crown. Our fellow-countrymen, who have gone forth as the pioneers of civilisation, will pursue their arduous labours with more vigour, when they feel that their lives and property are protected under the shield of a united empire.

The following discussion took place at the United Service Institution on a paper on the same subject, on May 17, 1873, Admiral A. P. Ryder in the chair :—

Captain CYPRIAN BRIDGE, R.N. : Lest it should be supposed that I have risen too soon, and not waited for other officers of greater experience, and who have given more attention to this subject than myself, I will, with your permission, just mention in a few words why I take such an interest in this question. In the first place, I take an interest that I believe every naval officer must take ; in the second place, I take an interest that I think every colonist (I myself having been born and lived in a colony for some years) ought to take in it ; and, in the next place, I take special interest in it as having taken some part in trying to direct the attention of my brother officers and the public at large to the great question of raising a Volunteer force which might be to the Navy what the great Rifle and Artillery Volunteer force has been to the Army. For these three reasons I have, perhaps, been induced to pay more attention to this subject than many people are inclined to think it deserves. In my opinion, no subject that could be brought before any assembly of Englishmen, whether in the mother-country or the colonies, is more worthy of attention than this. As Mr. Brassey has very well told us, in the able and interesting paper which he has just finished, the very life of

the Empire depends upon those relations which have been maintained with many of our great colonial dependencies. It has been my good fortune to visit every great group of colonies, with the exception of those in South Africa, beginning at Vancouver's Island and ending in Australia, so that I have a somewhat intimate personal knowledge of the condition of many of them. Of the great colony of Canada I am only acquainted with the maritime provinces; of Canada proper, the only places I have ever visited are Gaspé and Paspébiac; as to Nova Scotia, Newfoundland, and New Brunswick, almost every part of their coasts I know well. To show how feasible it has been thought in the Dominion of Canada, even some years before the Confederation, to establish a naval force of their own, there was in existence at Halifax, certainly as far back as 1865, a Naval Volunteer force. When I became aware that it was in existence, my stay at Halifax was too short, and my occupations too numerous, to enable me to make many inquiries concerning it. I did see some of the officers and men in uniform, but I understood it was more upon a land basis than a sea basis. The officers had military titles, and it was intended that they should be employed in time of war chiefly in defending batteries on shore. This is not, of course, what has been aimed at in the proposals Mr. Brassey has made this afternoon; but still I think it does show that, even at that period they were willing to take some steps towards forming such a force as has been proposed. With regard to the docking facilities in Australia, there must be many officers who have served in Australia much later than I have; but as far back as 1859, the ship to which I belonged, of over 1,400 or 1,500 tons, as we then counted them, was docked at a very large dock at Cockatoo Island, above Sydney, which even at that time was very much larger than was necessary to take in a ship of her size, and had previously taken in an Austrian frigate. The island was entirely given up to workshops and such places as are required in a naval yard; and I should imagine, with a very small expenditure of money, and in a very short time, it would have been made, and probably is now made, a very suitable and useful naval arsenal. I should, therefore, be very sorry to see the proposal carried out which Captain Colomb has made, and Mr. Brassey approved, to close one of our dockyards to open up others, because I do not think it is necessary. There was one point to which Mr. Brassey did not allude, which he mentioned as supplementing his proposal, and that is, he did not draw our attention—it could not have escaped his notice, because he has recently been to those parts himself—but he did not consider it necessary to draw attention to the fact, that in the Indian Empire

we have a very large nautical population. I do not mean to put them upon anything like the same footing as the colonists; but that they are good seamen, and fit to go anywhere, has been shown by the manner in which they have altogether taken the place of European seamen on the splendid Peninsular and Oriental steamers, not to mention others. It would be possible to so organise a force of these men, that they might set free a very large number of the seamen belonging to Her Majesty's Service at present engaged in special employment, which, during war, could be performed by men of the description of which I have spoken, and would enable the Europeans who now are employed in them to take part in the more important operations of war. There are also, I believe, considerable naval establishments there; at Bombay, I understand, the dockyard is a very large one. Mentioning that, reminds me of the unfortunate fact, that the Indian Navy was abolished; we are now feeling the want of it. In Mr. Brassey's paper, he of course alluded to a subject which, if not obviously, is very intimately connected with one to which he was virtually addressing himself, and that is the defence of our ocean commerce. Of course, this question of raising a Volunteer naval force in the colonies is solely with a view to defending our commerce. It seems to me there is a great amount of unnecessary alarm. No country has ever had so great an ocean commerce as we have, and no country has ever been in a position so thoroughly well able to defend it. All the arguments drawn from the case of the 'Alabama,' or the history of the war between the Northern and Southern States, when the American flag was driven from the ocean by one or two fast cruisers, are absolutely inapplicable to the condition of affairs at present. The American flag flew on sailing ships almost exclusively, and the cruisers which went against those ships, and eventually swept them off the seas, were steamers. A glance at the chart (on the wall) will show that it is marked with numerous lines, which lines, going from port to port, mark out the great highways upon which the ocean commerce of the world chiefly passes. Almost without an exception, every one of the most important of those lines begins and ends at or passes through some British possession. There is one great gap, I admit, in the system of defence supplied by our foreign possessions; that is the line which, we will say, begins at Vancouver's Island and ends at the south of South America and the Straits of Magellan. It is true that that line is flanked entirely by foreign countries, and we have no stations within those limits, which must be some 6,000 or 7,000 miles apart, where we can post a defensive squadron, or, what is still more important for a defensive

squadron, obtain supplies. But we ought to recollect we hold both ends of the line in our own hands. We hold Vancouver's Island, and we hold almost entire command of the Straits of Magellan in the Falkland Islands. If, therefore, we maintain the position we have got, and by so doing prevent the only cruisers than can be sent abroad by any enemy, Russia, for instance, obtaining supplies of coal, I do not see what we have to fear from vessels employed as the 'Alabama' was employed. Our commerce at present is carried on to a much greater extent than ever before by steam vessels. Those steam vessels would find almost along the whole of their route friendly coaling stations where they could obtain supplies of fuel. But no other country would be in the same position, or scarcely any other country. Consequently, I do not think there is much danger, except perhaps at the very outset of war, when cruisers would start with full supplies on board, which they would afterwards find very great difficulty in replenishing. I do not think, except at the outset of war, much danger need be anticipated; and probably the increased 'risk,' in case of war with Russia at that moment, would be no more than a very small addition to the insurance already paid. It therefore shows how extremely necessary it is that we should defend and hold these places, and keep them entirely secure against attack. Therefore I say it would be more advisable to turn our attention to establishing a Naval Volunteer force which should be upon the spot, and should keep those places in our hands, and prevent them falling into the hands of the enemy, than to drawing upon it to man cruisers and keep open highways, a service which I think would be thoroughly well performed by the Royal Navy. In common with many others, I have read the very able paper in the *Nineteenth Century*, written by Sir Garnet Wolseley, and I am one of the few people who do not agree with it in the least. I think an examination of it—it has been submitted apparently to no examination in any other periodical—would show that the career of that Russian squadron which Sir Garnet Wolseley has painted, has had no parallel in literature, except perhaps the cruise of the 'Flying Dutchman.'

Captain P. H. COLOMB, R.N.: After Mr. Brassey's splendid peroration it is rather difficult to get one's mind back to the facts of the case before us, but the remarks of Captain Bridge and Captain Field have brought us into a more proper frame of mind for discussing the question. Wherever Mr. Brassey comes I observe that he brings with him an enormous number of those things which I always express myself as being very fond of, namely, facts. He has given us splendid facts in the paper, as in everything he has written

on sea matters: the collection of facts is magnificent. His statement of the growth of the colonies, I am quite sure, puts a new face upon these questions to most of our minds; for my own part, though I have been considering this question to a certain extent, I never thought before of the enormous growth which has taken place since 1845. It never struck me in that light, but it shows we have in that time altered our position altogether in the world, that whereas we were then a country contained in the British Islands, with some little outlying dependencies, we have now become simply the centre of a great English-speaking Empire. I was very near bringing a book with me, and I am glad I did not, because if I had I should have been tempted to have quoted from it too largely—a book which my brother has drawn up, which is a simple collection of articles from colonial newspapers on this question of Imperial defence, and it is something quite surprising to anybody who will run his eye over those articles to see how ready the colonies are to meet us if we will only go to work to meet them. They seem to say, ‘You have only to say the word; let us talk it over; admit that you will not give us up; admit that we are brothers; admit that the English Empire is not the British Islands, but is scattered all over the world, and we on our side will stand by you shoulder to shoulder as long as you choose to call upon us.’ That seems to be the general tone of the colonial press, and that seems to me to answer Captain Field’s question; and I am very sure of this fact, that every friendly word uttered towards the colonies in any public assembly in England penetrates to the colonies, and is read there, and produces a corresponding friendly feeling towards the mother-country, and I am quite certain that that will be the effect of Mr. Brassey’s paper here to-day. I recollect reading in some of the debates—in the New South Wales House of Parliament I think, but I am not sure where—a very strong opinion was expressed in favour of trusting to the Royal Navy, and if necessary paying it, for the outer line of defence of their colonies. They seemed to say that they would wish themselves to confine their own efforts, out of the control of the Imperial Government, to the local defence, but they did not seem at all indisposed to bear charges for a force which should not be colonial, but should be used for the defence of their colony, as well as of any other, of course bearing a proportion according to the number of Her Majesty’s ships which were present. I did not myself gather that Mr. Brassey meant this: that England was to build the ships, and that the colonies were to find the men. I rather gathered that he wished that a Royal Commission, drawn from England and the

Captain
Colomb,
R.N.

Captain
Colomb,
R.N.

colonies, should meet together for the discussion of the question of defence. So soon as any colony had expressed its willingness to contribute its quota, that then the disposition of that quota, and how the money was to be spent, would be decided by a joint Royal Commission. That was what I understood. If it were to be said that an ironclad was to be built by England, and sent out to a colony, to lie there in the harbour to be only manned in time of war, I think I should be rather against that policy. I should rather say that a colony like Australia should provide a quota for the purpose of keeping up a sufficient Imperial naval force for the outward defence, and that then the local arrangements of the colonies themselves should be entirely devoted to the defence of their harbours against blockade or sudden attacks. Mr. Brassey has very truly represented me in saying I put great faith in a colonial system of Naval Volunteers, who shall rest the defence of their ports mainly on the use of torpedoedoes. It is the cheapest mode of defence, especially the spar-torpedo—Mr. Thornycroft's model. It is cheap, and it requires for its use men of great intelligence. The class from which the Volunteers would be drawn would be the people to manage such vessels; they would have the necessary resolution and daring to make the attack, and, at any rate, if they did nothing else, I believe they would keep them off by simple fear. But when they had done that, they would leave the Imperial naval force free. We should always know the ports were safe behind us, and we should take care that ships bound to those ports were unmolested on their way towards them. But I should not draw the line so closely as to torpedoedoes; I would extend it, I think, to the 'Gamma' and 'Staunch' class of gunboat, a class of ship quite capable of attacking an ironclad, but not capable of keeping the sea, and which seems to be a weapon costing a small sum, and exceedingly available for the defence of ports. I was very much struck with Mr. Brassey's statement of the number of seafaring men available on the coast of Canada and Newfoundland, and with the facilities which are given for the drill of those men at small inconvenience to themselves on account of the long winter. I cannot help thinking if they, as a small branch of the great matter, were taken in hand, we might be able on occasion to draw on Canada if we wanted it, for I should not be prepared to go to Australia for our seamen. I think the difficulty of the question is this: that up to quite recent years the colonies have been told by us always that, 'In point of fact, we do not much care about you, for you can go if you like. You are of no very great service to us: we can get on very well without you. If you give us trouble, we

shall say, "Go." It has been the policy of the country for a certain time. That policy, I am quite certain, is reversed, and I hope will never come forward again. I am quite sure as long as the English-speaking nations spread over the face of the earth hold together, it will be impossible for anybody else to make head against us.

Captain
Colomb,
R.N.

Admiral SCOTT, R.N.: Captain Bridge has touched upon a point which is no doubt very important—that is, the success of the 'Alabama' during the American War. We must, however, remember in regard to the United States losing their trade, that at that time sailing ships were becoming obsolete, and their trade from being principally carried in such vessels was also going down the incline; hence, it only needed a slight push, viz., the additional war insurance, to make the Americans sell their vessels, and their trade to pass with the ships sold to neutrals. This, therefore, is not a parallel case to ours at the present time. With respect to Mr. Brassey's very able paper, I wish again to refer to a point that has been more than once brought forward in this Institution. It is not enough to get weapons *stored in readiness*, but you must have them put into their right place for use in order to be prepared for war. To get guns *ready* to be put on board ship when war breaks out, is not the way to be prepared for a sudden outbreak of hostilities. We have long been training, and at a considerable cost, our Reserve seamen: these men are consequently always learning, but for want of *practice* are, I fear, never getting perfect. What the sailors want is, that when they go on board their own merchant vessels they should carry out what they have been taught. Each merchant vessel should, I think, be armed so as to be in herself formidable. Such a vessel, if commanded by a Reserve captain, and manned in part by Reserve men who had been keeping up their drill, would be far more formidable than any privateer that could be hastily fitted out to attack her. It should be remembered that these merchant vessels would be handled by men second to none in skill; in fact, many of their captains are first-rate fellows, and I need not point out to you that their ships carry a splendid weapon which is ready at all times, viz., a straight, powerful, knife-edge iron stem. No wooden vessel struck by such a weapon would have any chance of escape. Given an iron merchant vessel going at enormous speed, and with a powerful stem, and you only want to add two or three light guns—not 64- or 32-pounders, which would overstrain her, but 12-pounders; and she would then obtain the character of an armed vessel, and thus give the men confidence in protecting themselves. Besides the light gun and the knife-stem, there is the spar-torpedo, a weapon which

Admiral
Scott, R.N.

Admiral
Scott, R.N.

our Reserve seamen can easily handle; and as most of our merchant steamers carry whale boats they could be at once provided with an additional means of efficient defence. Then, as to Canada, the merchant ships belonging to that country—manned by their splendid seamen—would be really a very powerful supplement to our force of regular men-of-war if proper arrangements were made in time of peace. We have now got into a habit of considering the ironclad only as a man-of-war, but these merchant vessels are, at least for all points of *defence*, equal to most of our wooden vessels in their speed, in their power of ramming, in their sustained steaming, and in their sea-keeping powers. Turning to what Mr. Brassey has said about the armament for our colonies, I think it is necessary to commence on a small scale of expenditure, and that what is most wanted is first to enrol the seafaring men that are on their coasts for coast defence; likewise to enrol all the traders and their seamen as a Naval Reserve, and not to incur the expense of building special war vessels, but rather to utilise all existing means of defence. Let the men be enrolled and also the vessels and boats in which they are accustomed to go to sea, and then what more simple than to drill and afterwards to put torpedoes on board them? In addition to the torpedo armament, which I look upon as mainly serviceable for the purposes of defence, you have in your colonies an energetic seafaring people that could be easily organised for defence; and I believe it could be done at a very small cost. My own idea is, that from the instant the Reserve men are called out for drill they should be taken to practical work; let them be put to fortify those positions which are most important, and to make roads to and from them along the coast line. There are no fortifications so cheap or more efficient than sand banks and earthworks. Therefore, your shore drill should commence with erecting such defences, and your naval drill with firing torpedoes, which should be kept at all times ready for use. The colonists, as we hear on all sides, are quite ready to do their part, and I do believe that if that part were pointed out by a Royal Commission, it would have most important results. It would certainly show to other nationalities the latent force and power which this country really possesses. We have seen some newspaper articles lately which tend to give foreigners a very imperfect notion of the actual resources of this country; these affirm that our empire is so scattered that it has an inherent source of weakness. I venture to maintain, on the contrary, that its extension is an inherent source of strength, for our colonies, settlements, and coaling stations now girdle the earth, and would enable us to keep the seas in time of war. I again affirm

that all our ironclads should be sea-going, and that a coast defence ironclad is an anomaly ; and I believe that this paper is likely to be of very great service, and I for one think that our hearty thanks are due to Mr. Brassey for coming forward and reading it on the present occasion.

Admiral
Scott, R.N.

Mr. BRASSEY, in reply, said : I am very much obliged to those officers who have spoken, for the too kind manner in which they have referred to my paper. I was much flattered by the invitation I received from the Council of this Institution inviting me to prepare a paper on the Colonial Naval Reserve ; and if what I have written has any effect in setting in motion a scheme for organising our resources for colonial self-defence, I shall feel thankful that I have been engaged in such a useful task. The point has been referred to by several speakers as to the mode in which the expenditure necessary in carrying out such a scheme was to be dealt with. Captain Field very truly said, after all this is a matter which cannot be undertaken without an expenditure of money ; and speaking as a member of the Legislature, I fully appreciate that aspect of the case, and consider that it will require very delicate handling to settle it satisfactorily. Now the foundation of a practical scheme must be, as I have endeavoured to point out, an inquiry by some competent and fully representative body, and I cannot conceive how a more effective mode of inquiry could be devised than that which would be provided by a Royal Commission. As everybody has said, the initiative must be taken by the mother-country, and the best mode by which the mother-country can point out what is required to be done, and bring home to the appreciation of the colonists the necessity for doing what is necessary, will be provided by giving them the full report on the subject from a Royal Commission composed of naval and military authorities and representatives of the colonists, who would be able to speak on behalf of the Colonial Government as to the ability and willingness of the taxpayers in those colonies to contribute their share. I do not think one can speak definitely on this point until we have had this essential preliminary investigation. No doubt the Commission would begin, as individual writers on this subject have begun, by laying down what are the important strategical points which you have to defend. Some of these strategical points being ports of very flourishing trade, we may fairly look to the mercantile community to contribute what is necessary. In other cases you have an important strategic point which has not a flourishing trade, which is important in a naval point of view, but not in a commercial point of view ; such, for instance, as the Falkland Islands, or perhaps

The Com-
piler.

The Com-
piler.

Vancouver. You could not reasonably expect, in such a case as that, that the expense would be met from any other source than the national exchequer. Gibraltar and Malta are important strategical points and defended, and I think very properly so, at the expense of the mother-country. I now turn to the question very properly raised by Captain Field with reference to the ships. Those ships which may be considered necessary for the local defence of a flourishing commercial colony would, I think, belong to and be paid for by the colonies. Those ships which you might think it necessary to build for the local defence of places like the Falkland Islands would necessarily be paid for by the Home Government. Each case would have to be settled with reference to its local and special circumstances, which would be no doubt properly appreciated by the Royal Commission. I am glad that what I have said with reference to Canada and Newfoundland has been approved by those naval gentlemen who have spoken. In Canada there is a most admirable field for the organisation of a Naval Reserve. There is a large seafaring population, hardy and loyal, and valuable in every way for naval purposes, and from the necessity of the case unemployed during a considerable portion of the year. And when we come to consider how near the proximity of Canada and Newfoundland is, the facilities for communication by telegraph, the means you have of bringing to this country, if required, a very considerable force, so that in a fortnight you might have your Canadian reserves in your home ports, ready to man your ships; when you come, I say, to consider all these things, it must be acknowledged that we have too long neglected a very valuable source of naval power, and one which I trust will be developed by such an organisation as the Admiralty with small expense might easily establish on those coasts. I am glad to be reminded by my friend Captain Bridge of the resources we have in India. India I look upon as a precious jewel in the national diadem, but it involves the country in immense responsibilities. I will not enter into the question now, but the day may come when it may be to some extent a financial burden to this country. In any case it is satisfactory to know that we not only have responsibilities and burdens to bear in connection with India, but that our Navy may be strengthened from our Indian connection. I was glad to hear from the observations which fell from Captain Colomb that there has been an expression of opinion officially and in Parliament in the colony of New South Wales to the effect that the colony would be willing to contribute its proportion to the maintenance of such vessels of the Royal Navy as might be permanently stationed in the colonial waters. I think we might

reasonably expect such a view to be entertained in a wealthy and increasing colony. The Compiler.

The CHAIRMAN (Admiral Ryder): Hong Kong is a most important British colony, and yet a man might walk for days about it without finding a fort. It is absolutely undefended, except by a few insignificant guns. Singapore is also absolutely undefended. We have in the China and Japan Seas not exactly colonies, but settlements very much of the nature of colonies, viz., settlements on the main land in the treaty ports. It is difficult to persuade the English inhabitants to move in this matter of creating a Volunteer force. Englishmen in those distant parts may fight well enough when driven into a corner, but they for various reasons will rarely combine together to form Volunteer forces and submit to drill. You may find at one port some one or more enthusiasts who take the question up, and I do not know what we should do without our enthusiasts, as they form a nucleus. Thus we have, at Shanghai, a very respectable Volunteer infantry force—there is a small force of cavalry and Gatling guns—very much the kind of force that Mr. Brassey has spoken of; that is what we want in all our colonies, as I understand from his paper, and I entirely agree with him. The only difficulty is to start them. I see no reason why the Act authorising the enrolment of Volunteers should not be extended to the colonies and to the treaty ports of China and Japan, and that promptly. Admiral Ryder.

OUR COLONIAL EMPIRE.

*Address delivered before the Bradford Chamber of Commerce, Wednesday,
January 21, 1880.*

Colonies
visited
in the
'Sunbeam.'

You have asked me to address you this evening on the subject of our Colonial Empire. It is indeed a noble theme. Would that it were in my power to treat it worthily! In the course of many wanderings upon the seas I have visited Newfoundland; I have seen the magnificent scenery of the St. Lawrence, and the thriving cities of Montreal, Quebec, and Toronto. In a recent voyage round the world we touched at Hong Kong, Singapore, Aden, Malta, and Gibraltar. Within the memory of the present generation Hong Kong was a barren rock, from which a band of 600 pirates set forth on their lawless expeditions. It has now 124,000 inhabitants, including a civil European population of 3,000 persons, and the annual imports of English merchandise alone are not less than $3\frac{1}{2}$ millions sterling. At Singapore, where the English population numbers not more than 1,400, we have established a trade of collection and distribution not inferior in importance to that carried on from Hong Kong. The native vessels from every creek and harbour of the Eastern Archipelago collect together at the Straits Settlements, and are supplied from our well-managed counting-houses with European manufactures. Aden, which may be compared to a huge cinder lying on the arid coasts of thirsty Arabia, has become, under the beneficent influence of British administration, another great emporium of trade. Its commerce extends on the east to the shores of the Persian Gulf, and southwards to Zanzibar, and far down the eastern shores of Africa. Mocha has been deserted by the Arab merchants since we have established ourselves at Aden. An average number of 800 laden camels daily enter the gates, and the total exports and imports are nearly three millions sterling a year. Of the importance of Malta and Gibraltar as links in the chain of communication with the East, it is not necessary that I should speak.

I must not dwell further on personal recollections. I have spoken only of places which I have myself had the privilege of visiting; but it is not necessary to draw upon personal recollections in order to appreciate the fact that, without our colonies and our foreign possessions, England would fall to the second rank in the family of nations. Maritime states have in all ages of the world exhibited the same desire to establish colonies. Phœnicia, Carthage, and Greece were great colonising states in ancient times. In the Middle Ages the lion of St. Mark exhibited the symbol of Venetian power over the whole coasts of the Mediterranean. The discoveries of Vasco de Gama opened an era of incredible prosperity for Portugal; and Spain was not less indebted to the discoveries of Columbus. We have followed those illustrious pioneers of colonisation; but we have known better how to use our new sources of wealth, and our conquests have been more enduring.

Colonies
founded by
maritime
states.

Trade, as we know, tends to follow the flag; and, during the period of commercial depression through which we have lately passed, and from which we are now very gradually emerging, it has been in the British possessions alone that the export trade has displayed any growth and elasticity. British India now takes a larger quantity of our produce than any other country. In 1869 it only occupied the third place. In a paper by Dr. Forbes Watson, read at the Colonial Institute in February 1878, a comparison is made of our export trade in 1876 and 1869. I propose to bring the figures down to 1878, the last year included in the Statistical Abstract. The figures disclose a significant change in the direction of our external trade. While the exports to foreign countries had risen from 141,900,000*l.* in 1869 to 195,700,000*l.* in 1872, and had fallen again in 1878 to 126,611,000*l.*, our colonial trade has steadily grown in the same interval from 48,000,000*l.* to 66,237,000*l.*, or from 25·3 per cent. to 34·4 per cent. of our total commerce.

Importance
of colonial
trade.

When we pass from the aggregate figures to examine our colonial trade in detail, we discover additional evidences of its great importance to the industrial prosperity of our country. The populations of the British Empire in the parts beyond the seas are, in proportion to their numbers, by far the most extensive consumers of our manufactures. It appears, from a table prepared by Mr. Frederick Young, that the annual consumption of our merchandise per head is represented by the following figures:—United States, 7*s.*; Germany, 9*s.* 2*d.*; France, 7*s.* 8*d.*; North American Colonies, 2*l.* 2*s.* 9*d.*; Australia, 8*l.* 10*s.* 8*d.* A more elaborate analysis, by Dr. Forbes Watson, brings out this striking result, that Australia actually con-

sumes, in proportion to its population, a larger quantity of English manufactures than we require ourselves.

Our colonial trade is the more valuable because, as Dr. Forbes Watson points out, it is largely composed of articles in an advanced stage of manufacture. Of our exportations of apparel, blankets, flannels, books, cutlery, and other articles of domestic consumption, the colonies take 16,800,000*l.*, or about 70 per cent. of the total exportation. The proportion in 1869 did not exceed 58 per cent. Of the cotton trade, which forms about one-third of our total exports, two-fifths were taken by the British possessions. Between 1869 and 1876 they increased their consumption of our goods by 6,300,000*l.*; while our exportations to foreign countries diminished by 4,500,000*l.* Not only was the aggregate quantity increased, but the goods were more highly finished than those we supply to many foreign countries. The colonies take 40 per cent. of finished cotton manufactures; they take only 21·9 per cent. of cotton yarns. They take 23·4 per cent. of our woollen and worsted manufactures, and only ·3 per cent. of yarn. They take 40·4 per cent. of manufactured, and only 3·6 per cent. of pig, iron. They take 17·7 per cent. of wrought and unwrought steel, and 40·6 per cent. of our exportations of hardware and cutlery, and 53·2 per cent. of our exports of implements.

Supplies of
food from
colonies.

We have seen the importance of the colonies as the consumers of our manufactured products; they are not less essential to us for the supplies of food which they furnish to the teeming population of these islands. Mr. Bourne has shown that we cannot expect a material increase in the life-sustaining abilities of the land. Half of our food already consists of foreign importations. It has been estimated by Mr. Bourne that the demand for imported food and raw material will increase every year by considerably more than six millions sterling. We must proportionately increase our exports in order to pay for these ever-growing importations. We have seen the stagnation in the Continental demand, and the growth in the consumption of our goods in our own possessions. If some of that capital so recklessly squandered in mushroom States had been carefully and gradually expended in our own colonies, the investors would have obtained a steadier return, and the commerce of this country would have received a more lasting benefit. The colonies offer an inviting field both for the industrious labourer and the small capitalist. In our own country there is already an ample population, and the openings are few for men of moderate resources. Men without capital, even when gifted with abilities beyond the average, experience a delay of years before they can cover the ordinary cost of living from a professional or a commercial income.

Mr. Bourne, in his recent paper, has urged the duty of colonisation, both on economic and on still higher grounds. By conquest, by discovery, and from motives of philanthropy, we have appropriated a wide space upon the earth. We cannot evade the responsibilities of our acquisitions. We must give to these countries the freedom that we enjoy, the commerce and the agriculture that we have organised, the civilisation under which we live, and the religion with which we ourselves are blessed. It is only by emigration that this beneficent mission can be accomplished.

Duty of
colonisa-
tion.

We have now passed in review some of the salient facts of our colonial development. We have just reason to be proud of our wide and growing empire beyond the seas. It may not always be possible to preserve a common centre for such an empire, although we have simplified our task to the utmost by yielding to the colonies an absolute independence in their internal affairs; but in this we shall all agree that our noble confederation shall not be broken up for the sake of a paltry reduction in the Navy or the Army Estimates.

The cost to the British Exchequer of the most valuable colonies has been brought down to a nominal charge. There is no reluctance on the part of the wealthier colonies to bear the cost of local defence. Sydney already possesses a turret ship, the 'Cerberus.' Melbourne has a small navy. At Adelaide an ironclad has been proposed. At Sydney a force of 300 regular artillerymen, a torpedo corps, and a naval brigade of 100 men has been organised. New Zealand possesses an efficient militia as a protection against the Maories. Tasmania has a corps of 800 volunteers, described to me by Lieutenant Bower, of the 'Wolverine,' from whose correspondence these details have been derived, as badly organised, but full of zeal. Both Sydney and Melbourne have been partially fortified. It has lately been determined by each of the Governments of Victoria and New South Wales to expend 350,000*l.*, besides an additional annual outlay of 73,000*l.*, in providing a force of ships, guns, and torpedoes.

Defensive
resources
of colonies.

The resources of our colonies are, indeed, ample for every purpose of self-defence. The fisheries of the Dominion of Canada, according to a statement of Mr. Frederick Young, give employment to 1,000 ships, 17,000 smacks manned by 7,000 sailors, and 26,000 fishermen. I am, however, informed by Sir Bryan Robinson, for twenty years Judge of the Supreme Court of Newfoundland, that these figures are inadequate. Speaking of the colony with which he has been himself connected, he says that the male population in 1874 numbered 82,693. Deducting, one-half for old men, young children, and a few persons who do not follow a seafaring life, there would remain 41,347 sailors

familiar with square-rigged vessels. The Dominion stands fifth in the maritime tonnage of nations, ranking after Great Britain, the United States, Norway, and Italy, but before Germany and France.

Turning from Canada to the Antipodes, their naval resources may be appreciated when we consider the immense seaboard of New Zealand, and the distance of a thousand miles which separates it from the Australian continent, and which must inevitably lead to a great development of maritime enterprise and power.

Necessity
for organ-
isation of
colonial
forces.

In a paper published in 1872 in the *Annual of the School of Naval Architecture*, Mr. Barnaby rightly urged that the British Empire, if effectively organised as a maritime confederacy, would be enabled, not only to maintain itself in security from attack, but that it would be a guarantee of maritime peace to all the wayfarers on the seas. Organisation, however, was then wanting, as it still is, and it is a work which essentially belongs to a time of peace. The initiative must come from the mother-country—from our experienced statesmen and our numerous body of highly-trained officers, who have leisure for the consideration of these things.

The task before us is difficult, because it has been too long neglected. In a speech at the Crystal Palace in 1872, Lord Beaconsfield expressed his regret that the means and responsibilities by which the colonies should be defended, and by which, if necessary, this country should call for aid from the colonies themselves, had not been considered and defined at a time when self-government was conceded. I find an identical expression of opinion in the *Telegraph*, a Brisbane journal, in an article on a pamphlet on *A Colonial Naval Volunteer Force*, which I published in 1878. The question still demands solution. When presiding at a meeting of the Royal United Service Institution, during a discussion on Captain Colomb's paper *On the Naval and Maritime Resources of the Colonies*, I remember to have heard Mr. Strangways, late Premier of South Australia, declare that the first and most important subject for consideration was that of Imperial unity. He asked whether, if they called upon the colonies to join with England in a general advance of the whole empire, they were prepared to give to those Colonies a voice in the question of peace or war. That was the very essence of the question. If England became involved in a great war, it would have one of two effects in connection with her relation to the colonies. It would either bind England and her colonies into one vast empire such as the world had never seen, or it would entirely separate her from those Colonies. Which was the end that they should seek after? Was it not that of uniting

together, into one vast whole, the enormous resources of the whole English Empire? Mr. Strangways recommended a Federal Council, which should be consulted on questions of external policy. Sir Julius Vogel, another ex-Colonial Minister, expresses the opinion that there is nothing impracticable in this proposal, because there is a complete identity of thought in the British people.

The colonies are sensible of the weakness of isolated action. They know that each colony is too jealous of the rest to admit of a formidable combination under any other supremacy than that of the mother-country. They know, to use the words of the leading Sydney journal, quoted by Mr. Baden Powell, that it would cost the colonies no more to have their naval defence under Imperial than under local control, while they would get much more for their money in the shape of security. The proposal of Mr. Barnaby that each member of the British Confederation should contribute towards the national fleet in proportion to the volume of their exports, may be made the basis of an equitable arrangement. It may be that some more independent plan in the nature of a perpetual and friendly alliance may be adopted. Whatever may be the final settlement, the indefinite adjournment of this question, simply because it does not happen to be pressed forward by agitation out of doors, is most earnestly to be deprecated. Bitter, indeed, will be the reproaches heaped upon the statesmen or the party which should be held responsible for having, from mere neglect, brought about the disintegration of the Empire.

The apportionment of responsibility, as between England and her wealthiest and most populous colonies, is the only difficulty with which we have to grapple. With regard to the points to be defended and the methods of defence, there are no differences of opinion. Few words can be necessary in order to establish the importance of providing for the defence of our coaling stations or the lines of communication with our Australian colonies and with India and China. Since the introduction of propulsion by steam, of iron ships and iron armour, foreign naval stations are more than ever requisite for supplies of coal and for repairs, which can only be effected in port. A steam navy, and more especially an ironclad navy, if deprived of its coaling stations, is practically helpless. The 'Alexandra,' our flagship in the Mediterranean, at her maximum speed, does not carry coal enough for three days; while at the slower speed of thirteen knots, she burns 200 tons a day. The limit of her range at full speed does not exceed the distance from Plymouth to Lisbon or, perhaps, Gibraltar.

Defence of
coaling
stations.

The recent detention of transports at St. Vincent, at a time when the early arrival of reinforcements at the Cape was a matter of most momentous importance, is another illustration of the necessity that exists for a sufficient number of well-supplied and properly-defended coaling stations. The importance of securing the British coaling stations against attack is the more urgent because all our coaling stations in America, the Brazils, in the North Atlantic, the Cape de Verds, Madeira, and Lisbon, and those in the Pacific and Japan, would no longer be accessible. Coal is contraband of war, and, as our cruisers would be unable to obtain supplies at the ports to which they usually resort in time of peace, the replenishment of coal would be one of the great difficulties with which the Navy would have to contend.

Strategical
bases for
our foreign
squadrons.

The bases on which the Navy would mainly depend in the event of war were enumerated by Sir William Jervoise in a paper read before the United Service Institution in 1871 : ‘Malta and Gibraltar for the Mediterranean ; Halifax and Bermuda for the Atlantic ; Port Royal, Jamaica, from its position with reference to the West Indies and the Gulf of Mexico ; Bombay and Aden, Simon’s Bay at the Cape of Good Hope, Port Louis, Mauritius, a harbour in Ceylon, Singapore, Hong Kong, and some other ports are, in military language, the strategical bases for our foreign squadrons.’

Existing
means of
defence.

Vigorous efforts were lately made, under the apprehension of a war with Russia, to extemporise defences ; but until a recent period Galle, Singapore, and Hong Kong on the line to India and China, and St. Helena, the Cape, and the Falkland Islands on the Australian route, were practically undefended. I have already stated that steps had been taken by the Colonial Legislatures to erect defences for Sydney and Melbourne ; but I am not aware what progress has hitherto been made, and a letter lately received from a naval correspondent gives a somewhat humiliating picture of the state of affairs so recently as 1878. At that time, he writes, there was one never-failing topic that would excite and interest a colonial community. It was necessary merely to mention the words ‘Russian privateer,’ and anywhere in the towns of Sydney, Melbourne, or Auckland the audience would start an animated discussion. Bank managers would explain that there was constantly a reserve of three millions in the Sydney banks, and in other towns a proportionate amount. Others would dilate on the useless expense of inadequate defensive works. A strong patriotic feeling existed ; and, as a consequence, torpedo corps were extemporised, torpedoes ordered, guns mounted, and every preparation made for a passive defence ; but,

from first to last, in these English communities, amongst the most enterprising people in the world, nowhere, except in Melbourne, was a single preparation made for active offensive warfare. If we have been remiss in not providing for the defence of our colonies and coaling stations, we have been equally supine on the scarcely less important question of dock accommodation. In the last session of Parliament, the First Lord of the Admiralty was perseveringly questioned by Colonel Arbuthnot, who succeeded in eliciting the admission that none of the colonies have availed themselves of the Colonial Docks Loan Act of 1865, and that, in point of fact, except at Malta and at Hong Kong, and perhaps Australia, we have no dock accommodation for large ironclads away from England.

Returning to the unprotected condition of our foreign naval stations, it may be asked: ‘By what means is the defence to be secured?’ Method of
defence. Not, it may be answered, by the seagoing fleet. The main object of our naval policy, says Captain Colomb, should be to maintain our communications by sea, by means of seagoing ships, which should be employed, not in the defence of the coaling stations which are their base of operations, but in cruising on the great sea route to and from the heart of the Empire, and in blockading the enemy in his own seaports. Fortification, as it has been said by Major Parnell, is merely a form of economy. It secures our ports, and allows our ships to be used more advantageously in offensive fighting. It is as a fence round a field. The farmer could keep off intruders by employing watchmen. A fence is the cheaper method. Fortifications need not be costly. Booms, torpedo boats, earthworks, a few guns judiciously placed, will protect a port from isolated cruisers. In America, where, in the long struggle with the Southern States, naval operations for the attack and defence of harbours were carried out on a scale of unprecedented magnitude, it is considered that large ironclads are unnecessary, and that heavy guns, rams, and torpedoes are sufficient to make a good defence against a modern fleet. Where a military force is required to man works, the Colonial Governments will doubtless be prepared to raise a local militia, or to organise volunteers. Where a naval force is required to man a flotilla of rams or torpedo boats, it should be organised upon the model of the Royal Naval Artillery Volunteers, a corps which has been so successfully developed, both in London and Liverpool, and lately in Bristol.

A force like our Naval Reserve would also be required to man the crews of seagoing vessels. Mr. Marshall Smith, an experienced master in the colonial merchant service, reports to the *Nautical Magazine* of May last that the crews of the merchant shipping of Australia number

5,300, of whom he anticipates that 2,000 would be ready to enrol in the Naval Reserve. If the colonial seamen could be induced to join, the mother-country could readily furnish the officers and instructors.

These are proposals which require forethought rather than money. In a harbour of great commercial importance such as Singapore or Hong Kong, a small charge upon the tonnage would provide the necessary funds. Where the trade is small, as in the Falkland Islands, the Home Government must pay just as it now does for Gibraltar and Malta.

For the harbour defence of India, the Indian Government has hitherto relied mainly on the torpedo. Two ironclads, the 'Magdala' and the 'Abyssinia,' have been provided, in addition, for the defence of the harbour of Bombay. Each of these ships cost 150,000*l.* It has been urged in a professional journal of authority, the *Broad Arrow*, that with ten more such vessels we might effectually defend the Indian coast from the Indus to the Ganges.

Merchantile
auxiliaries.

Passing from harbour defence to the protection of our commerce on the high seas, I cannot express the opinion too strongly that it should be the policy of the British Government to make that commerce as far as possible self-defending. The rapid steamers owned by private shipowners, as both Mr. Burns and Mr. Donald Currie and other equally high authorities have pointed out, would supply an enormous additional power of offence as well as of defence. The Admiralty have issued circulars inviting the owners of ships, satisfying certain conditions as to bulkheads, to register their vessels on a list of reserve cruisers of the Navy; but no further action has been taken. In order to carry out this policy it would be necessary to offer inducements to shipowners, who contemplate the construction of ships of a suitable character in point of speed and other qualities, to communicate with the Admiralty at the time when the designs are being prepared. It would then be easy for the Constructor's Department to point out what special modifications were necessary in order to adapt such vessels for war service, and the expense of those special modifications should be defrayed by the Government. The terms upon which the vessels would be taken up by the Admiralty, when required in time of war, could not be determined beforehand, but would form the subject of an equitable arrangement when the emergency arose. This suggestion is one which, I fear, will never be adopted, unless it be forced upon the Admiralty by public opinion. Naval officers naturally desire to spend all the money voted for the naval services upon ships built specially for war.

I regret that I have occupied so large a share of your time with topics which may appear irrelevant in addressing a Chamber of Commerce. I plead the importance of the subjects I have brought before

you, and the necessity of arousing the Government to action. The annual value of the foreign commerce of this country, as shown by the Board of Trade Returns, exceeds 600 millions sterling. To this should be added for the shipping a sum which would bring the total amount at stake, in the event of war, to more than 650 millions sterling. Now, if it could be shown that, with an expenditure of less than a million, our coaling stations could be made secure, could any Government stand excused before the country which would hesitate to apply to Parliament for the funds required for such a purpose? Under our popular system of government nothing is done except in deference to external pressure. Agitation is too often the necessary preliminary to all administrative or legislative action. In appealing to the Chamber of Commerce of Bradford, I seek to make use of my present opportunity for a patriotic and a practical purpose. We are here to-day on a neutral platform in the centre of a great hive of industry. We acknowledge our dependence on our foreign commerce, and we think it our duty to arouse the Government to a sense of responsibility for the security of our trade. We stand here to-day to discharge a still higher duty—to proclaim to our sons and our brethren, who have gone forth from our shores to settle in the distant dependencies of the Crown, that we admire and are thankful for the energy they have displayed in turning wildernesses into gardens, and in spreading their flocks and herds over the prairies of North America and the boundless plains of the Antipodes. They are rapidly forming themselves into new nations; but we trust that they may be long content to live together with us beneath the mild and equal sway of our beloved and constitutional Sovereign. Let us send it forth as a message from Bradford that, so far as it depends on us, we claim no right of interference with their concerns, while, on the other hand, we are ever ready to obey their call for help. We think that the union of the Anglo-Saxon race is a mutual benefit to all the members of the family. Within a period of time so recent that it seems but the yesterday of history, we have seen the Italians and the Germans united under one Government. We recognise the accession of influence which these nationalities have gained. More lately still, we have felt the pressure of Slavonic ambition. We have watched the progress of these events without apprehension for ourselves, because we have had confidence in one another. Our communities may be scattered over all the earth. It is our pride and glory that they are; because while we remain united by one deep national sentiment, and England is still a home to all her sons, there is not weakness, but strength, in the wide extent of our Colonial Empire.

Property
at stake
in British
foreign
trade.

SECTION XI.

ROYAL NAVAL RESERVE.

PARLIAMENTARY SPEECHES

APRIL 3, 1873, APRIL 17, 1874.

In these speeches the suggestions more fully described in the preceding papers are repeated. The steps taken by the Admiralty are explained in the replies from the Treasury Bench.

MOTION AND DEBATE.

HOUSE OF COMMONS, April 3, 1873.

Speech on Moving for the Appointment of a Select Committee on the Naval Reserve.

MR. BRASSEY, in rising to move that a Select Committee be appointed to inquire into the condition of the Naval Reserves, expressed his regret, in which they would all share, at the death of Mr. Graves, in whom the British seaman had lost a sincere friend and an able advocate.

History conclusively proved the essential importance of a merchant navy to any naval power, and the situation of this country was pre-eminently satisfactory. The tonnage of the mercantile fleet of England was 7,142,000 tons; that of the United States, 1,500,000 tons; Germany, 1,305,000 tons; France, 1,077,000 tons; and that of Russia, 250,000 tons. It might be assumed that the number of seamen was proportionate to the relative tonnage. With such advantages we ought to be absolutely secure against attack, and able to exercise a decisive influence in all questions of foreign policy, and especially the Eastern question, in which our interests were intimately involved. But, owing to the substitution of steam for sail power, our maritime population no longer showed any tendency to increase, and our Naval Reserve exhibited a proportionate diminution of strength.

Strength
of Reserve.

The Royal Commission of 1859 recommended that the standard of strength for the Naval Reserve should be maintained at 20,000 men and for the Naval Coast Volunteers at 10,000 men. The actual strength of the Reserve had fallen from 17,000 in 1866 to 12,000 men in 1873. The Naval Coast Volunteers scarcely exceeded 600. The reduction in the number of the Naval Reserve was much to be regretted.

Appliances
for drill.

As to the efficiency of the Reserve, we had received repeated assurances of a satisfactory character from Admirals Cooper Key,

Warren, Elliot, and others, by whom the Reserve had been officially inspected. The Reserve might be made still more effective if greater liberality were displayed in providing the necessary facilities for naval gun drill. The guns on board the training-ships of the Reserve were generally 32-pounder smooth-bores. Of 6½-ton guns there were only two on board the training-ship, at which the whole of the Reserve men residing in the London district, some 1,200 in number, were trained. He might add that the cost of the ammunition was not an element for consideration in this case, as the guns on board the 'President' were never fired. He had of late attended frequently at drill on board the 'President.' Pulling the same ropes and manning the same winch-handles with the men, he had opportunities of forming an opinion of their personal qualities, and he could testify that the men belonging to the Reserve, as a rule, took a deep interest in their work.

The Reserve suffered in point of efficiency; not only from the inadequate appliances for drill, but also from the want of any pecuniary encouragement to attain the highest possible degree of efficiency. Under the rules, which until very lately were in force, a uniform rate of pay was given to every seaman in the Reserve, irrespective of his conduct or proficiency in drill. In the Navy, the system of rewarding good discipline and efficiency by pecuniary advantages had been developed to the greatest possible extent. In the gunnery line, more especially, the various classes of pecuniary rewards had been conceived in the most liberal spirit. If this system were found necessary in the Navy, where they had the means of preserving discipline and creating another and higher stimulus to exertion through the influence of an admirable *esprit de corps*, how much more necessary must it be in the Reserve, where the men were never assembled together long enough to afford their officers an opportunity of establishing a personal influence over the men? The revised rules contained a provision for giving a badge, with an allowance of 1*d.* a day, for every Royal Naval Reserve man passed out from the drill-ships as a trained man. The pay was the same as in the Navy; but in the Navy the seamen had an opportunity of earning 365 pence in the year; whereas, in the 28 days during which the Naval Reserve men were at drill they could not earn more than 2*s.* 4*d.* Again, the seaman in the Navy, on becoming a trained man in gunnery, was merely on the bottom round of the ladder. Numerous rewards were held out for proficiency in gunnery; whereas the ultimate reward of the Naval Reserve man was limited to the paltry sum which he had named. He would recommend that a trained man in the Reserve should

Gunnery
pay.

receive a gratuity of 1*l*. The additional expense to the country would be slight, and they would at least have the satisfaction of knowing that the men who earned the gratuity possessed a respectable knowledge of the most essential part of a man-of-war's-man's duties.

Moderate
scale of
naval ex-
penditure

Within the last week a revised code of rules had been promulgated for the Reserve, containing amendments on the old rules, all of which he heartily approved. Almost every improvement which could be carried out without spending more money had been effected. The Government might object to the proposals which he had to make, because they involved some additional expense. He sympathised with the Admiralty in their anxiety to keep down expenditure. The increase that had taken place in the price of materials and in wages, and the altered conditions of naval architecture, had raised the old estimate of 1,000*l*. per gun for a ship of war to about 100,000*l*. per gun. Compared, however, with the tremendous outlay on our iron-clad ships, the cost of carrying out his suggestions would be an insignificant item. The present scale of naval expenditure, if set down at an average of 10,000,000*l*. a year, constituted a very moderate premium of insurance against the dangers of invasion or the anxiety and disgrace of a sudden panic. In 1858 the total value of our imports and exports was 234,000,000*l*., and the tonnage of our merchant vessels was 4,211,000 tons. The value of our trade in 1870 was 547,000,000*l*., and the tonnage of our shipping was 5,633,000 tons; while the expenditure on the Navy had been reduced, in the interval, from 10,590,000*l*. in 1858, to 9,900,000*l*. in 1872.

Regula-
tions as to
entry.

He would now point out those other improvements which he regarded as essentially necessary. Why, he asked, were the numbers of the Reserve so considerably reduced? To some extent that reduction was due to the greater care exercised in the admission of candidates for enrolment, and to the dismissal of ill-conducted and inefficient men. The rules formerly in force excluded a considerable number of seamen in every way qualified for the Reserve. Seamen could not be re-entered unless they were actually serving at sea. Under this rule many experienced seamen were ineligible. Again, the qualifications excluded all but *bonâ-fide* seamen from the Second-class Reserve. Fishermen and boatmen were ineligible. Under the revised code, an acquaintance with square-rigged vessels, and residence on board a training-ship while at drill, were no longer necessary.

Drill of
Second-
class
Reserve.

Under the regulations originally drawn up, the seaman enrolled in the Second-class Reserve in the port of London was compelled to attend drill on board the 'Penelope' at Harwich, while the seaman

on board the First-class Reserve was allowed to remain at home and drill on board the 'President' in the West India Dock. The young seamen who, under the rules as to qualifications, were drawn from the same class as the First Reserves, valued just as much as their older shipmates the privilege of remaining at home in the short intervals between their long foreign voyages, and the enforced absence was naturally distasteful. All that it was desirable to alter in the regulations as to qualification had been altered in the revised rules; but he much regretted that the allowance for travelling expenses was not more liberal.

He would now proceed to direct the attention of the House to the desirability of multiplying the places of drill for the First-class Reserve. For seamen residing in London, there was only one ship or battery at which they could be drilled—namely, the 'President' in the West India Docks. Another drill ship should be established on the Surrey side of the river. If an additional ship could not be provided, the seamen's expenses in travelling to and fro should be paid when residing beyond a certain distance from the drill ship.

Drill batteries, port of London.

The removal of the restrictions on enrolment for the Reserve would, he hoped, have the effect of adding considerably to their numbers. But the severity of the restrictions was not the only reason why it had been found impracticable to keep up the number to the standard recommended by the Royal Commission. There were two other causes at work: first, the tendency in our maritime population to decrease, owing to the immense increase in the number of steamers, which did not require so large a proportion of sailors as sailing vessels. The second cause of diminution was found in the material reduction that had taken place in the proportion of sailors required in comparison to the tonnage of vessels. Since the opening of the Suez Canal, shipbuilders had been employed almost exclusively in the construction of steamers. In 1864 the total tonnage of the mercantile marine was 7,103,000 tons. In 1871 it was 7,142,000 tons. But while the tonnage of steam vessels in 1864 was 770,000 tons, it had increased to 1,412,000 tons in 1871. In 1868, 237,687 tons of sailing vessels were built, and 78,508 tons of steam vessels. In 1871 only 56,545 tons of sailing vessels were built, while the construction of steamers had increased to 297,810 tons. Mechanical appliances had been multiplied. Patent blocks, steam winches, and other substitutes for manual labour had been introduced; and whereas, in 1854, the proportion of seamen to every 100 tons was 4·7, it had been reduced to 3·25 in 1870. It had been erroneously stated that the number of British seamen had diminished by the in-

Reduction of sailing ships, and in the complements of merchant ships.

roduction of foreigners. In 1864 the number of foreigners in British ships constituted 12·6 per cent. of the whole number of seamen employed. The percentage had been reduced in 1870 to 10·1.

Alleged
deteriora-
tion of
seamen.

An impression very generally prevailed that the seamen had not only diminished in number, but that they were inferior, both in character and skill, to their predecessors. It was difficult to reconcile this opinion with the fact that our ships were manned by a smaller number of hands, made more rapid passages, and were never laid up in winter.

The inferiority of our seamen, so far as it might fairly be admitted, might partly be attributed to the increase in the number of steamers. In the mercantile marine, where speedy transit was all-important, the substitution of steamers for sailing vessels was, in many branches of the shipping trade, inevitable.

Argument
for train-
ing ships.

The increase in the number of steamers, and the repeal of the Navigation Laws, had led to a great reduction in the number of apprentices enrolled. The number had fallen from 15,704 in 1845 to 10,370 in 1846, and 4,111 in 1871. While the apprentices had been reduced to less than half their former number, the annual waste of British seamen was computed at 10,000, of whom, unhappily, 3,000 were lost by drowning. In the interests of the Navy, it was necessary to do something to increase the supply and improve the quality of seamen in the merchant service. The shipowners were perfectly able to take care of themselves. There was no difficulty in obtaining men for steamers, because men on steamers were paid higher wages. The wages of ordinary seamen had not been increased for twenty years, and it could scarcely be a matter of surprise if many of them sought employment on shore in better paid and less arduous occupations. It was entirely in the interests of the Navy that he would recommend that some steps should be taken by the State to improve the training of boys for the mercantile marine. It was not practicable to raise the number of boys in the training ships under the Admiralty. The training in the Navy was more complete, but it cost 55*l.* per head for every boy under training, as against 25*l.* per head for boys trained in the ships maintained by philanthropic societies. The ships of the philanthropic societies rendered excellent service. The Marine Society of London supplied 167 boys to the Navy in 1871, and since its foundation, in 1756, the Society had sent 26,754 lads into the service. But more instructors and better appliances were necessary in these ships, and, above all, brigs should be attached to the stationary vessels, in which the more efficient lads could be sent for a cruise at sea. The training-ship maintained by

the city of New York was constantly cruising in Long Island Sound. The expense of giving this more complete instruction was beyond the scope of private philanthropy, and it was a question whether the Government should not be called upon to render some assistance.

The Royal Commission of 1859, at whose suggestion the Naval Reserve was established, strongly recommended that twelve school ships should be established at the principal ports, each capable of receiving 200 boarders, of whom 100 should be nominated by the State. After an apprenticeship of four years the young seamen entered in these vessels would be eligible for the Reserve. A somewhat similar plan had been proposed by Sir Frederick Grey; and Mr. Thomas Gray, of the Board of Trade, had suggested that the Government should take over one of the ships now maintained as a philanthropic institution on the Thames, and one of those on the Mersey, and that all boys entered on either of the ships taken over by the Government should, in consideration of the superior training which they would receive, and which would probably enable them to command superior wages in the merchant service, agree to serve for a year in the Navy on the completion of their apprenticeship, and afterwards to join the Reserve.

He ventured to make another proposition which he most earnestly commended to the consideration of the House. The Government should encourage owners of ships of an approved class to take apprentices, by giving a bonus for every apprentice on board their ships who had been duly indentured to the Registrar-General as a Government apprentice, and had agreed, on the completion of his apprenticeship, to serve in the Navy for a year, and afterwards to join the Reserve. The number of apprentices should be limited—say one for every 100 tons—and the ships should be of an approved class. A bounty of 5*l.* might be paid to an apprentice on joining the Navy for his year of service. As compared with training-ships such a plan would be both more practicable and less expensive.

Bonus for
Govern-
ment ap-
prentices.

He would now turn to the officers of the Reserve. No well-considered plan had been prepared for the command of the Naval Reserve, either during their annual drills, or when called out for active service. The half-pay and retired lists contained many officers who would eagerly accept permanent employment in the Reserve with a trifling addition to their retired pay. The officers of the mercantile marine, who received commissions in the Reserve, should be systematically trained. Young gentlemen, socially qualified for service in the Navy, were being educated on board the 'Conway,' in the Mersey, and the 'Worcester,' in the Thames.

Officers of
Reserve.

If the Admiralty were to afford to these officers a competent knowledge of gunnery, we should have in them an invaluable reserve of officers. For this purpose a short practical course of gunnery and naval tactics should be arranged, in connection with the 'Excellent,' analogous to the course of military instruction for Volunteer officers at Aldershot. Eligible young officers of the mercantile marine should be encouraged to go through the course by the offer of a premium, to be paid to them on their passing a satisfactory examination. The premium should be sufficient in amount to cover the expense of their residence in Portsmouth, and also to compensate them for their loss of income while remaining on shore for the purpose of study. The Board of Trade would do much to promote the success of this scheme by raising the standard of examination for the extra master's certificate, so as to include both modern languages and the more important elements of commercial science. The privilege of going through the course on board the 'Excellent' might be confined to officers who had passed this higher examination. The creation of the Naval Academy at Greenwich would doubtless do much to facilitate the fusion between the officers of the Reserve and the Navy, which, from every point of view, was much to be desired.

Coast
Volunteers.

From the Royal Naval Reserve he would turn to the Coast Volunteers. Recent naval administrators had unaccountably neglected this branch of the Reserves. The Committee of 1852 recommended a force of 6,000 Coast Volunteers, and the Royal Commission of 1859 advised that the number should be fixed at 10,000 men. According to the latest estimates, the number had been reduced to 600. It could not be said that eligible men were wanting. The latest Return showed that 153,000 men and 14,000 boys were employed in the fisheries of the United Kingdom. In point of physical power the fishermen were superior to the seamen in foreign trades. Their local knowledge would be of immense value in coast defence, and the fact that they had fixed places of residence, and never sailed under a foreign flag, made it certain they would always be found when required. Of their moral character he could speak with the greatest confidence.

Additional
batteries.

The Coast Volunteer was not popular in the Navy, because the men originally enrolled were admitted into the service for political purposes with discreditable laxity; but it would not be difficult to raise from among our fishermen a Reserve equal to the standard recommended by the Royal Commission. From a perusal of the revised rules he was encouraged to believe that there was a disposition to induce the fishermen to join, not the Naval Coast Volunteers, but the Second-class Naval Reserve. The means, however, which

were proposed for carrying out this policy were inadequate. The fishermen were congregated in isolated communities on various points of the coast. They were men of domestic habits, and it would be difficult to induce them to join the Reserve, if they were drilled far from home. The list of ships and batteries at which the Naval Reserve might take their drill, though imposing enough in point of numbers, did not include some of the most important fishing communities. There were batteries at Poole, where the number employed in fishing vessels was only 214; at Maryport, where there were only 69; and at Lynn, where there were only 266; but there were no establishments at Sligo, which had 4,800 men and boys in the fishing vessels of the port; none at Skibbereen, which had 5,500; none at Banff, which had 5,600; nor at Stornoway, which had 8,000; nor at Wick, which had 8,400; nor at Inverness, which had 9,000 fishermen. The Manning Committee of 1852 strongly recommended that the Scotch naval station should be re-established. Where the Navy was best known, there the flower of the population were ready to enter it. In 1852 there were more men in the Navy from the village of Cawsand, near Plymouth, than from the port of Liverpool. The Return of the counties in which the boys in training ships in 1871 were born showed that, out of 2,888 boys, only 90 came from the whole of Scotland, only 112 from Lancashire, including the Isle of Man as well as Liverpool, only 23 from Suffolk, 11 from Norfolk, and 18 from Wales. Could it be supposed that the great seafaring populations on those coasts had ever been made thoroughly acquainted with the advantages of service in the Navy and the Reserve? The fluctuating nature of their occupation would enable the fishermen to attend drill with little inconvenience. The drill could be taught in the most effective manner, and with the least expense to the Government, by sending a gunboat to visit the fishing ports at the slack season. These periodical visits of a smart, well-organised gunboat would do much to create a favourable impression of the Navy among the fishermen. The expense of keeping a few gunboats in commission for this purpose would be nominal; for we had more seamen at present in the home ports than it was possible to employ in seagoing ships. Some of these men might be attached to gunboats instead of remaining in stationary flagships.

In addition to the various descriptions of forces already enumerated, an attempt had been made to extend the Volunteer movement to the coast defence service. A corps composed at present of one hundred gentlemen employed in banks and private offices in the City had been provisionally enrolled, and several hundred additional appli-

Volunteer
movement.

cations for admission had been received. The Volunteers actually entered had attended drill on board the 'President,' and he was enabled to state that, in the opinion of the instructors, they were the most intelligent gunners who had ever been drilled on board the ship. The movement had extended itself to Liverpool, where the First Lord of the Admiralty did so much to initiate it by an encouraging speech. It remained to be proved whether the idea was a practical one. Not until the Volunteers had been afloat in a gunboat for a few days, and had shown their ability and readiness to perform all the duties which devolved on a seaman in a gunboat, should he venture to regard the experiment, with which he had the honour to be associated, as an accomplished fact. Much of the success of the Naval Volunteer movement must depend on the readiness of the Admiralty to afford the necessary facilities. The most immediately pressing matter was the appointment of a commanding or inspecting officer. Until the Admiralty placed a naval man of rank and experience at the head of the Volunteers, an invaluable aid to efficiency would be wanting, and the formation of a contingent at many of the ports round the coast would be indefinitely delayed. The formation of an able staff of inspecting officers for the Reserve was essentially necessary to secure their efficiency. The Reserves, including the Coastguard, now numbered not less than 20,000 men. Surely the supreme command of such a force was a task worthy of the most distinguished admiral in the service. The Commander-in-Chief should be supported by a sufficient staff of naval officers, to whom should be assigned the supervision of the Reserves in the St. George's Channel and on the east coast of England. While hitherto there had been no inspecting staff for the Naval Reserve, a very different policy had prevailed at the War Office in providing a staff for the inspection of the land Volunteers. An admiral sent on an occasional tour of inspection was not a sufficient substitute for an officer specially devoted to the duty. In urging the appointment of a staff officer, he did not undervalue for a moment the services of that admirable body of men, the seamen instructors in gunnery in the drill ships of the Reserve. It was impossible to speak too highly of their zeal, their intelligence, their discipline, and their consummate knowledge of the subject on which it was their duty to give instruction. But naval officers, judiciously selected, would exercise a higher influence over the *morale* of the Naval Reserve. The merchant seamen would feel themselves, in a larger sense than heretofore, an integral part of the Navy of England. They would be inspired by its great traditions, and the confidence which they would acquire in

their officers would be an invaluable guarantee for their conduct and discipline should they ever be called upon to join Her Majesty's service. The hon. gentleman concluded by moving the appointment of the Committee.

Mr. SHAW LEFEVRE said, in reply, that his right hon. friend the First Lord of the Admiralty would have to speak on some other important questions which stood next on the Notice Paper; he would, therefore, ask permission of the House to deal with the motion of the hon. member for Hastings. He concurred in the remarks of his hon. friend on the loss of the late Mr. Graves, who had made this subject almost his own, and whose mercantile experience, sense of public duty, and freedom from party spirit rendered his advice most valuable. His hon. friend, however, had shown that the task had not fallen into unworthy hands.

Mr. Shaw
Lefevre.

He began his speech by remarking that though the question of the *matériel* was one of great importance in relation to the Navy, that of the *personnel* was of still greater importance. In this he entirely agreed with his hon. friend. The country had enormous resources in the way of shipbuilding: a Return before him showed that 391,000 tons were added to our merchant service in 1871, as compared with 212,000 tons in 1861, so that were it necessary to renew our fleet within a short time our private shipyards could do so; but if by any mischance a large proportion of the *personnel* were lost, it would be a difficult task to supply their places. The question of Reserves was, therefore, a very important one; but even here our resources as regarded merchant seamen were great, and he doubted whether, including our Colonial Empire, they did not exceed those of almost all the rest of the world put together.

Importance
of *personnel*
of the
Navy.

It was often said that the increase of steamers had greatly reduced the number of seamen in sailing vessels; but a Return showed that in 1854 there were 146,500 sailors in sailing vessels in the foreign and coasting trades, and in 1871 the number was 141,000, showing a reduction of only 5,000 men. In our steamers in 1854 there were 15,800 men employed, and in 1871, 58,706, so that while there had been an enormous increase in the number of men employed in the steamers of the merchant service, there had been only a slight decrease in the number employed in sailing vessels. This showed that the increase of steam vessels had not operated so prejudicially, as was believed by some, on the sailing vessels.

Number of
seamen in
sailing
ships main-
tained.

He was sorry to hear his hon. friend give the weight of his great authority to the statement that our seamen were deteriorating. He

Deteriora-
tion of
seamen.

OUR NAVAL RESERVES.

...restated to express an opinion counter to the ...by his hon. friend, particularly Mr. Graves; but ...of Trade he had given great attention to this ...visited all the ports and collected all the facts he ...mercantile marine officers, and he could not find that ...had deteriorated. Considering that the proportion of ...tonnage had greatly diminished, a given number of men ...more work than formerly, and considering also the enormous ...of yachts and of seamen employed in them, he could not ...there had been any falling off in quality. Steamers did not ...men themselves. On the contrary, they paid high wages and ...the best men. The question of seamen was a question of ...wages. Those who gave good wages and good accommodation, and ...their men to sea in well-found ships, would have no reason to ...complain of any lack of good men.

There were two ways by which a Naval Reserve could be obtained: the one was by passing men more rapidly through the service; the other by enlisting men from the merchant service into a special Reserve. The former was more analogous to what among military men was called the Army Reserve, the latter, to the Militia. If he understood rightly, his hon. and gallant friend Admiral Erskine rather advocated the first of these two methods, that of passing them through after their ten years' service. He would point out that we had reserves of both kinds—the Coastguard and the Naval Pensioners were of the first kind, and the Naval Reserve men of the second kind.

Means of
manning
the Navy.

He would now answer the question put by the hon. Member for Northumberland (Mr. Liddell) and others, as to whether the Reserves we had already got were sufficient to man all our vessels. That was, no doubt, an exceedingly important point. He was glad to state that there was every reason to believe from the calculations which had been made that, taking the men in the service, the supernumeraries in our ports, the Coastguard and the Naval Pensioners, we had considerably more than would be required to man the twenty-three ironclads which had been spoken of, and every other vessel which we could possibly send to sea within any reasonable period, and a margin of something like 6,000 men would be left besides. How was that possible? The House did not, perhaps, fully understand the great change which had occurred in our requirements as regarded blue-jackets. Every year the number of blue-jackets required in proportion to other men was diminishing. By way of illustration he would take the old three-decker, the 'Victoria,' which

had been the flagship in the Mediterranean a very few years ago, and compare it with the 'Lord Warden,' which was now the flagship there, and also with the 'Devastation,' probably the fighting ship of the future. For the 'Victoria' 1,100 men were required, of whom 600 were blue-jackets. For the 'Lord Warden' 600 were sufficient, of whom 230 were blue-jackets. For the 'Devastation' 300 men would suffice, of whom only 100 would be pure blue-jackets. Therefore, supposing we had a fleet of ten three-deckers like the 'Victoria,' we should require 6,000 blue-jackets, while for ten 'Devastations' only 1,000 would be required. That showed how much farther the force we now had would go than in former years, and it had a very important bearing on the recommendations of the Royal Commission of 1859. If these recommendations were now applied, our resources were not such as we could wish; but with reference to the change which the fleet had been undergoing since that year, our resources were by no means deficient, and at the outbreak of a war we should be in a very good position indeed.

If, however, a war were to arise we should have not only to man all the vessels we possess, but to take up vessels from the private trade, fit them out as cruisers, and send them to distant parts of the world. During the war between the Northern and Southern States of America, the United States Government fitted out no fewer than 750 steamers, and manned them with 50,000 men for the purpose of cruising, blockading the ports of the South and for other purposes. That would be the case with us should war break out. We should have to fit out an enormous number of vessels for various purposes; and though, as he had said, we had sufficient men to supply all our vessels of war, yet we should find employment for all the Reserves we could get. At the same time it should be borne in mind, that all these Reserves would not be employed in the same important work as would be required of the men in the regular fleet; they would not all be employed at the guns.

Mercantile
auxiliaries.

A good deal was to be said in favour of passing men through the Navy into the Reserve; and if we could see our way to do so rapidly, it, no doubt, would be the preferable course. We already educated no fewer than 3,000 boys for the Navy, and that number was sufficient, but not much more than sufficient, to keep up the supply of 18,000 men for our fleet. There was much to be said for increasing the number of boys and passing the men through the fleet. But there was this difficulty. It was alleged by naval men that we had not room in our seagoing cruisers for more boys and young seamen than we had at present. If we were to increase the number of our

Objections
to shorter
service in
the Navy.

boys we should be reducing the average age of all the men in the Navy, which naval men said could not be done with advantage. The average age was sufficiently low already. But as the proportion of seamen required for ships of war was greatly reduced, it was of infinite importance that they should be thoroughly trained in every respect. It was necessary, therefore, to maintain the training ships. Therefore, he could not hold out the prospect that we could pass any large number of men rapidly from our fleet into the Reserve. That being so, we must look to the merchant service for our Naval Reserve.

Regulations for entry into Reserve.

The hon. Member for Hastings (Mr. Brassey) and others had pointed out that of late years there had been a tendency in the Naval Reserve to diminish in number. That was due, in a great measure, to the stringency of the Regulations of 1869, which were intended to increase the efficiency of the force by weeding it of inferior men. But he could assure the House that subject during the last year had received the most earnest attention. His hon. and gallant friend (Admiral Erskine) appeared to think that no scheme had been sufficiently considered. But if his hon. and gallant friend had been at the Admiralty, and seen the mass of papers on the subject and the attention which had been given it, he would have been of a different opinion.

New regulations for training.

The hon. member for Hastings had alluded to the changes which had taken place with respect to the First and Second Reserve, and seemed to have given his hearty approval to all that had been done in the matter. In the first place, as regarded the First-class Naval Reserve, the Admiralty had greatly increased the number of places where they could be enrolled. Formerly they could be enrolled only at a few places, but now they could at any Coastguard station. The restriction which before prevailed had kept men not only from enrolling, but from re-enrolling themselves after passing through the first five years of service. Twenty-eight days' consecutive drill were formerly required in the First Naval Reserve, and that was found to diminish the number who enrolled; but according to the new Regulations which have been framed, the men during the first year were only trained fourteen days consecutively, and after the first year they might be drilled not less than seven days at a time. Again, they had provided that the trained men should receive the 1*d.* a day which was now given to the trained men in the fleet, though of course the former received the payment for a month only, while the latter had it throughout the year. His hon. friend the member for Hastings appeared to think that was hardly sufficient; but there was considerable difficulty in giving to these trained men a larger amount than

the trained men in the fleet. At the same time he recognised the fact that the Naval Reserve were not underpaid. Their pay was good and amply sufficient. The difficulty did not lie in the direction of pay. They had done one other thing for the trained men—they had offered them a certain proportion—five per cent. of their entries—of appointments in the Coastguard. Hopes to that effect had been held out from the early days of the Naval Reserve, but it was not till now that these hopes had been realised.

He now came to the Second-class Naval Reserve, where the changes had been so considerable as almost to amount to re-constituting the force. The Second-class Reserve up to the present time had been almost a total failure from the restrictions imposed by the regulations. Instead of confining it to seamen who had served in square-rigged vessels, they had opened it to all ordinary seamen and fishermen, who constituted so very large a force in this country, which they hoped would prove a mine of wealth to the Naval Reserve. There had also been an alteration as to the age at which men were to be entered. Instead of the limit as stated by the Regulations of 1869, of eighteen to twenty years, the ages at which the men might enter were now to be from eighteen to thirty; and they had also provided that the Second Class might be enrolled, drilled, and paid at the same time as the First-class Naval Reserve. His hon. friend the member for Hastings appeared to think that if, as they hoped, the Second-class Reserve increased very largely, the batteries and drill ships would not be sufficient for training purposes. Of course, if they found that fishermen were entering the Second-class Naval Reserve, it would be matter for consideration whether they should not increase the number of batteries or facilitate their being drilled in gunboats or drill ships, as proposed by the hon. member; but it would be time enough to consider that point when the Second-class Reserve had considerably increased. The new Regulations of which he had spoken had only been completed within the last month. They had been most carefully considered, and had now been issued. There had not been time to ascertain what would be their effect; but he had reason to believe that the number of both Reserves would be considerably increased. He had consulted the Registrar-General of Seamen, who was confident in his opinion that when the new Regulations were well known along the coast there would be a large accession of numbers to both First- and Second-class Reserve.

Second-class Reserve.

The hon. Member for Hastings (Mr. Brassey) had alluded to the want of 6½-ton guns in the Reserve ships; but every one of the Reserve ships had two of these guns, besides others of smaller

Appliances for drill.

calibre. His hon. friend spoke of 1,200 men taking their drill on board the 'President;' but he very much doubted whether there would be more than 250 as an average at one time drilling on board that ship, and there would be nothing like that number in some of the drill ships—not more, perhaps, than 100 being drilled at one time. Spreading their drill over the time allowed, he believed all the men could be trained with the larger guns, and in the first instance they would be trained with guns of smaller calibre. With regard to batteries, they were nearly all formed before the 6½-ton gun was introduced into the service, and the general introduction of the 6½-ton gun would necessitate the complete change of the batteries. At the same time it would be the duty of the Admiralty to supply proper and sufficient guns and batteries as occasion required.

Inspection
reports on
Reserve.

While he was on that point he should like to read to the House the Reports recently received from Admiral Elliot and Sir Henry Keppel on the subject of the Naval Reserve. They were most satisfactory, and could not fail to give confidence to members as to the present state of the force. Admiral Elliot said :—

'The inspection was entirely satisfactory in regard to the men of the Naval Reserve. Those I saw were, as a rule, fine active seamen, working the guns with much spirit and goodwill, and showed a creditable knowledge for the amount of teaching they had respectively undergone. In every ship without exception, the behaviour of the Naval Reserve was reported to be entirely satisfactory.'

Sir Henry Keppel, an officer of great experience, and one who was certain to speak what he thought, said of the men of the 'Dædalus:'

'As individuals they were fine able-bodied men, in the prime of life, and certainly superior in physique to the average of our own able seamen. Their rifle, cutlass, and great gun exercises were very creditably executed, without any noise whatever, and the men appear to have been carefully and well trained. On consulting with Commander Parsons, the gunner, and boatswain, they reported the men to be well-behaved and tractable. The gunner views the badge-men as equal to our own trained men; twenty-three of the forty-two on board are so qualified. The boatswain considers them more full of resources than our men. They are not equal to our men as leads-men, nor would they be so smart aloft. The gunner states that, notwithstanding the intervals of absence from drill, the men appear to forget little of it.'

Of the men in the 'Eagle,' he said :—

'They were scarcely so fine a body of men as those in the

“Dædalus,” but still contrast favourably with a similar number of able seamen from our service.’

With respect to the Naval Coast Volunteers, it was intended to allow those who now composed that corps gradually to die out, in order that men qualified for that corps might enter for the Second-class Naval Reserve, so that, in point of fact, there would then be only two corps—namely, First- and Second-class Reserves. The Admiralty hoped the effect of this arrangement would be that the number of men passing from the Second to the First Reserve would greatly increase.

Coast
Volunteer

As to the new force, the Naval Volunteers, being an extension to the Navy of the movement which had proved so beneficial to the Army, already two of these corps had been established: one at London, and the other at Liverpool, and the formation of one at Bristol was now talked of. The Admiralty had cheerfully allowed the drilling of these Volunteers on board the ‘President;’ and it would be a matter for further consideration what arrangements should be made with regard to future enrolment which could not take place under the existing law. The law relating to the Naval Coast Volunteers was not suitable; and it would, therefore, be necessary to pass a measure to regulate enrolment in the new force. The Admiralty approached the subject with every desire to avail themselves of the proffered aid, and it was intended to nominate an officer who should put himself in communication with the gentlemen who were forming these Volunteer corps, to render them what assistance he could in the matter of organisation, and advise the Admiralty on all points connected with them. It would be necessary to determine in what way the new force could be assisted with gunboats, and to consider various other questions; and his right hon. friend the First Lord of the Admiralty would, no doubt, have to submit a measure to Parliament for the purpose of organising the Naval Volunteers.

Naval
Artillery
Volunteer

The expediency of Government assisting the training ships of the merchant service was discussed last Session, on the motion of Mr. Graves; and on that occasion the First Lord deprecated the Navy undertaking to train seamen for the merchant service, but expressed his readiness to contribute towards any scheme devised by the ship-owners in proportion to the benefit which the Navy derived; while the President of the Board of Trade pointed out how a fund could be obtained from the contributions made by shipowners to the Mercantile Marine Fund, and invited the co-operation of the shipowners in the organisation of a scheme; his right hon. friend, however, the President of the Board of Trade, had taken means to ascertain the

Training
ships.

views of the country, but he had not found a disposition on their part to contribute to the establishment of training ships for the merchant service. Of course the House would not expect the Admiralty to put a vote on the Estimates to meet the cost of training boys for the merchant service. When the hon. member for Northumberland (Mr. Liddell) spoke of the demand there was on the part of the shipowners for trained apprentices, he could not help inquiring where were the shipowners, members of the House, while the discussion was going on. One who had been present (Mr. Alderman Lusk) had objected to the scheme of the hon. member for Northumberland, and he now noticed but one other shipowner in his seat (Mr. Bates). The Admiralty had done what they could towards improving the First and Second Classes of the Naval Reserve, and he hoped the hon. member for Hastings (Mr. Brassey) would be satisfied with what they had done and were now doing, and with what they indicated as their policy for the future, and would not therefore press his Amendment.

Mr. BRASSEY said, after the explanations and promises which had been given, he would not press his Motion.

Amendment, by leave, withdrawn.

ROYAL NAVAL RESERVE. OBSERVATIONS.

HOUSE OF COMMONS, April 17, 1874.

Reprinted from 'Hansard.'

MR. T. BRASSEY, in rising to call attention to the organisation of the Royal Naval Reserve, and the importance of establishing a close connection between the Royal Navy and the mercantile marine, said the House need not approach the subject with any misgiving as to the naval resources of the country. The number of seamen and seafaring persons employed on board ships entering and leaving the ports in the United Kingdom was not less than 407,000, and in that estimate he did not include the vast number of ships flying the British flag in colonial and foreign waters. He believed he was correct in saying that if we had a maritime conscription such as existed in France, we should be able to muster a force of not less than 700,000 men to man our fleet. Our available Naval Reserve was of enormous extent as compared with that of other nations, and it would be unreasonable to expect that the First Lord of the Admiralty, who had so recently taken office, would be prepared to declare his adhesion to any definite policy on the subject.

Naval
Reserves
of the chief
maritime
Powers.

As a means of comparison, he would quote a few figures from an interesting speech delivered last year by Commodore Goodenough at the United Service Institution. It appeared that the maritime conscription in France comprised a force of 172,000 men; but the whole of those men were not fit for active service at sea. For some years before the Franco-German War the number serving on board the French fleet was about 15,000, while 7,000 men were in reserve in barracks. The men of the Reserve were double the number of those in active service, and would constitute a force of 65,000 men, from twenty to thirty-six years of age.

Commodore Goodenough estimated the strength of the Naval Reserves of the North German Empire at 80,000 men, of whom only

a small proportion had actually served in the North German Navy. At the present time about 5,000 seamen were serving in ships in commission and in barracks, and the Reserves might be taken at 15,000 men.

The United States had no Naval Reserve whatever, and the absence of such a Reserve had been frequently deplored by the Secretary of the United States Navy in his Report to Congress. In Russia, the number of ships of the Imperial Navy engaged in active cruising was too limited to afford the means of giving an effective training to a large number of men as sailors. The mercantile marine was comparatively insignificant. From this review we might safely conclude that we had only to organise with the completeness which marks the preparations of other Powers, in order to make ourselves perfectly secure.

Require-
ments for
manning
a war
fleet.

Sir Frederick Grey had expressed an opinion that for our War Navy we should require 84,000 officers and men. Admiral Sherard Osborn, in his recent pamphlet, had recommended approximately the same numbers; and those estimates would not seem exaggerated when we took into view the extent of our commerce and the demands which might be made on our resources for the protection of our colonial possessions. The recent changes in naval warfare afforded no justification for departing from the recommendations of the Royal Commission, of which Lord Cardwell was the chairman. An effort should be made to enrol 20,000 seamen in our Naval Reserve, and to establish a force of 12,000 fishermen for coast defence.

It had been urged that the Naval Reserve was a force on which they could not rely, and that our seamen were deteriorating. Those opinions were not shared by the officers, who had had the best opportunities of forming a judgment. Sir Cooper Key's report of the 1,700 men of the Reserve, embarked in the fleet for a month's cruise at Whitsuntide 1869, was decidedly favourable. It was much to be regretted that such cruises were not more frequently repeated. They would create a greater confidence in the Reserve on the part of naval officers. The Naval Reserve men would realise more fully that they belong to the Navy; and young officers would derive much advantage from the opportunity afforded of becoming familiar with the manœuvres of a fleet.

Alleged
deteriora-
tion
of mer-
chant
seamen.

When, however, we were hearing so much of the deterioration of the seamen in the merchant service, there might be a doubt in some minds as to the possibility of obtaining recruits for the Reserve; and it was essential to know how far these allegations rest on facts. The complaints we heard were not now made for the first time. Before

the repeal of the Navigation Laws in 1849 the incompetency of the officers, and the want of discipline among seamen, were the theme of constant complaints among shipowners. The present alleged deterioration was denied by Messrs. Gray and Hamilton. They gave their opinion unhesitatingly that the general condition of our seamen is not so bad as it had been represented; and they said that it had greatly improved since the consular reports were presented to Parliament in 1848. There were black sheep in the merchant service; and, since the introduction of steamers, the best men had been attracted to the steam service, leaving an inferior class to man the sailing vessels. Thus there had been a separation of the experienced and well-conducted men from the inferior hands; and it was probable that in the present day many ships' companies contained a lamentably small proportion of well-disciplined and properly qualified seamen.

The inferior scale of wages in sailing vessels, as compared with steamers, was the cause of the difficulty. No general complaint was heard among the owners of steam ships. At the meeting of the shipowners at Liverpool, lately called for the purpose of receiving the deputation from the Board of Trade, Mr. Inman said that he believed a good wage would secure good men. The Inman Company made it a rule to give no advance note, and to take only married men, if they could get them. That had proved to be an excellent rule. They never wanted men; and they had many men in the service who had been with them fifteen years. His opinion was that if men were well treated in the fore-castle, and well paid, shipowners did not want any assistance to get excellent men.

Wages in
steamers
and sailing
ships.

Steamers not only offered higher wages, but also the great boon of shorter absences from home; and the employment was, in many cases, a continuous service. The practice of paying off the crews as soon as vessels arrive in port, and delaying the engagement of another crew until the last moment, was not calculated to ensure the services of efficient men. In the Royal Navy it was found necessary to introduce the continuous service system; and shipowners should endeavour to find employment for their seamen in the intervals between their long voyages. A certain period of leave on full pay would be a well-merited indulgence after faithful service during a lengthened absence from home. It might be said that all these concessions would be gladly made, but that they would involve considerable expense, and that the profits of the trade were too small to allow of additional charges being placed upon the employers of seamen. In that case the public must bear the charge by paying higher freights; and he

was confident that the improvement in the seamen, which would gradually follow from the payment of better wages in sailing ships, together with the boon conferred by giving continuous employment, would have the happy effect of diminishing the loss of life and property at sea. The reduction in the premiums of insurance would compensate for the expenditure upon wages.

Shipowners would derive no benefit from the intervention of the State in encouraging apprenticeships to the sea and subsidising training ships, so long as the wages of skilled workmen on shore remained so much higher than the wages of seamen. It was a well-known fact that at the present time a large number of seamen who had been carefully trained were serving, not as seamen but as firemen. They were induced to undertake that disagreeable task by the somewhat superior wages which they received in that capacity, while many left the sea altogether because their experience as sailors had given them an aptitude for many employments on shore, in which they earned better wages than they could command either in steamers or sailing vessels. Having made these observations, it was only fair to add that higher wages were paid in our own merchant service than in any other, excepting that of the United States.

Confidence
in British
seamen.

Hitherto the nations which had been builders of ships had furnished seamen to man them; and, as the United Kingdom enjoyed an undisputed pre-eminence as a shipbuilding country, we might be confident that our sailors could hold their own with the sailors of other nations. He desired that the question should be looked upon as a national question. It was quite clear that if there was anything in the state of the law prejudicial to the interests of the sailor, it should be at once considered with a view to its amendment.

Allotment
notes.

There was one point of considerable public importance to which he would invite the attention of the House. He referred to the practice of issuing to seamen advance notes upon their being shipped for service on board vessels of the mercantile marine. That point had been repeatedly brought under the consideration of the Commission on Unseaworthy Ships, and it had been argued that the practice was a serious cause of deterioration among our seamen. The seaman could not cash his advance note, except at a heavy discount. The money raised by the transaction was too often squandered in debauchery, and in many cases not a farthing was laid out in providing an outfit of clothes for the intended voyage. Seamen, it was further to be observed, were the only class of labourers who received an advance of wages before any work was done. The allotment note, on the other hand, was most advantageous to seamen and their

families, and should receive all possible encouragement from ship-owners.

The Commission has reported that it was exceedingly desirable that sailors' boarding-houses should be licensed and under inspection, and that no such boarding-houses should be allowed in connection with beer-houses and public-houses. He hoped that the Government might feel justified in adopting the suggestion. It was further urged that we should come to some understanding with foreign Powers as to the restraint of crimping in seaports abroad, and that it might be feasible to make crimping by a British subject in a foreign port penal. It might be possible, by consular convention, to insure to shipowners that agreement made by the seamen in this country should continue binding upon them in a foreign country.

Seamen's
boarding-
houses.

Shipmasters, again, scarcely did their duty to each other in the mutual endeavour to obtain good crews. In the discharge note it was a practice to endorse the seaman in the conventional words as 'very good,' when, in truth, he deserved a different character. Even in the Reserve some very bad bargains for the country might be found, and there should be no hesitation on the part of the responsible officers in weeding them out. The retainers were so liberal that none but efficient and well-conducted men should be allowed to remain in the service. The expense of 12*l.* per man was far too large to admit of inefficient men being retained, and he suggested that a different arrangement should be made in regard to seamen entering the Reserve for the first time. The uniform retainer was 6*l.* for every man, irrespective of attendance at drill or proficiency in drill. By a recent regulation, an addition of 1*d.* per day was given, but as the men served for only 28 days, it did not involve a large extra expenditure, or offer any great stimulus to improvement. If, however, they had fixed the minimum sum at 5*l.* with an additional scale of pay up to 6*l.* for efficiency in drill and good conduct, a greater stimulus would be given to the men to acquire a knowledge of their duties. The expense would not be much greater than at present, and it would not be grudged by the country.

Discharge
notes.

Retainers
should be
depend-
ent on
efficiency.

Recruiting for the Reserve had been checked by the increase in steamers, and especially by their extended employment in the coasting trade. Coasting steamers were so short a time in port that the crews could not attend drill without losing their regular employment. Steamers were a bad school of seamanship, but there was still an ample fleet of sailing vessels to form a nursery for the Naval Reserve.

Training
ships for
the Re-
serve.

It was much to be regretted that we had failed to keep up the

Reserve to the standard recommended by the Royal Commission, or even to the number it reached only a few years ago. The Royal Commission on Manning recommended that the force should be composed of trained seamen, and it was to be recruited in the first instance from adults. As a temporary measure 20,000 men were to be enrolled from the merchant service, but the future supply was to be drawn from school ships which were to be established, capable of accommodating from 100 to 200 boarders in each ship, of whom 100 were to be supported by the State. Two thousand four hundred boys would thus be supplied annually to the mercantile marine and the Reserve. It was recommended that 40,000*l.* should be voted annually for the maintenance of the ships. No vote had ever been taken to carry into effect this recommendation, nor had any vote been taken to supply the place of the Naval Coast Volunteers. There were at present, it was true, eleven training ships at different ports; but, in so far as they were to be regarded as training vessels for the Reserve, the 'Warspite' alone was entirely satisfactory. Seven of the training ships were intended to receive street Arabs, and, under the Industrial Schools Act, they had received a total subsidy of 11,870*l.* These ships could accommodate 1,900 boys, and the actual number on board was 1,250. There were also three reformatory ships, capable of receiving 750 boys, the actual number being 647. For the maintenance of these ships 8,906*l.* had been contributed by the State.

The Government aid was confined to industrial schools or reformatories afloat. Nothing had been done to help poor but respectable parents to train their sons for the sea. He would suggest as an experiment that they should take over one of the ships stationed in the Thames and one in the Mersey; that the boys should be of the same class as those admitted into the training ships of the Navy; and that the expense of the ships should be met by a contribution in equal thirds from a special vote to be taken, as for educational purposes, by a contribution from the Mercantile Marine Fund, and by a grant from the Admiralty, from the vote taken for their general training establishment. The contribution from the Admiralty should be payable only on the completion of the training and upon the boy's qualifications being tested by examination. It should be a further condition of the Admiralty grant that the boy should consent to serve in the Navy for one year. The special vote in aid of training ships might be defended upon the ground that the State is bound to provide for the education of the people. The cost of maintaining boys in the existing training ships was on an average

20*l.*; but assuming that the instruction was made more perfect than at present it would probably be safe to take the expenditure at 30*l.* a head. In each of the ships in the Thames and the Mersey accommodation should be provided for 250 boys. He assumed that the outlay proposed might be justified only on the ground that it was to furnish a reserve for the Navy; and, therefore, the number of boys, in respect of whom a grant should be paid, must be settled by the authorities responsible for our naval defence.

It had been proposed by several local marine boards that the Government should encourage apprenticeship to the sea, by offering a premium of 10*l.* to every boy on completing an apprenticeship of four years, on production of a certificate of character, and passing an examination in seamanship. It should be stipulated that all apprentices receiving premiums should serve a year in the Navy as ordinaries, receiving a further gratuity of 10*l.* on leaving the Navy, and passing into the Reserve. If they remained in the Reserve until 50 years of age, they should be entitled to the same pensions as seamen in the Navy. If a full Reserve could be formed from the boys thus trained, the necessity for the Reserve paid by annual retainers would, as Mr. W. S. Lindsay had pointed out, no longer exist.

Government apprentices should serve in the Navy.

He need not again enlarge on the importance of forming a Reserve for coast defence among our 150,000 fishermen. It would be worth while to commission a few more gunboats, to be employed in visiting the fishing stations in the slack season of the fisheries; thus affording the fishermen the opportunity of learning their gun-drill, without travelling to an impossible distance from their homes, and avoiding the necessity of keeping up several permanent batteries on shore, where there was often a most scanty attendance. The employment of a few gunboats on that service would be useful, if only to increase the opportunities, so rare at present in the experience of naval officers, of becoming acquainted with our coasts.

Reserve of fishermen.

Our pleasure fleet is now manned by 6,000 of the most eligible of our fishermen. It was most important to secure these men for the Reserve. No more honorary commissions in the Naval Reserve should be given, except to owners of yachts who had done good service in recruiting for the Reserve. The privilege of flying the white ensign should be reserved to owners who could bring fifty men, being *bonâ fide* yachtsmen, into the Reserve, and who kept up the number by providing substitutes for any of the original recruits who withdrew from the Reserve. Cadetships in the Naval Reserve had been given to young gentlemen from the 'Conway' and 'Worcester,' and that

Honorary commissions.

should be followed up by giving them a short course on board the 'Excellent.' Officers of the Volunteers were invited to go to Aldershot, and no more commissions should be given in the Naval Reserve except to officers of the mercantile marine who had duly qualified. The value of the Naval University at Greenwich would be immensely increased as a national institution, when the officers of the merchant service were allowed to participate in all the advantages it afforded.

Inspecting
staff.

Lastly, he urged the appointment to the Reserve, at an early date, of a competent staff of officers with an Admiral at their head. Until a recent date the Controller of the Coastguard devoted a portion of his time to the Reserves; but the work would demand a considerable staff of officers, if the duty of increasing the numbers and efficiency of the force was properly done. An officer of high rank and considerable influence should be placed at the head of the Reserve, who would be in a position to claim the attention of the Admiralty to any representations he might deem it his duty to make on behalf of that important element of our naval force.

Mr. Gos-
chen.

Mr. GOSCHEN said he was as glad as the noble Lord who had just sat down (Lord Eslington), that his hon. friend the member for Hastings (Mr. T. Brassey) had taken an early opportunity of bringing the subject of the Naval Reserve of the country under the consideration of the new House of Commons, and he trusted that the new House would look with favour on that most important force, and that when hon. members brought the subject forward with the industry, accuracy, and talent of the hon. member for Hastings the House would always receive them with the attention they deserved. . . .

He was aware how important it was that our Naval Reserve Force should be kept up, but at the same time he did not think that the fears that had been expressed with regard to it were in any way justified; and the comparison instituted by the hon. member for Hastings between our naval force and those of foreign countries should not have too great weight attached to it, because it was impossible for us to ascertain how much of their naval force consisted of real sailors, and how much of the other classes to which he had referred. . . . He ought not to sit down without thanking the hon. member for Hastings, not only for raising so interesting a discussion upon the question, and for the interest he had taken in that House in the Naval Reserves, but for the great service he had done out of the House in initiating in a great measure the Royal Naval Artillery Volunteers, which he hoped would become a large force, which certainly would prove most useful in case of necessity. There were great difficulties to be overcome in organising such a force, because

for men to go to sea was much more difficult than to go to drill in Hyde Park, the personal sacrifice and inconvenience being greater, and more time being required. So great, however, had been the energy displayed by the hon. member and others in the matter, that these difficulties had been, in a large measure, overcome, and it was hoped that the movement had now obtained a fair start. He therefore trusted that the right hon. gentleman opposite would see in the Royal Naval Artillery Volunteers an important although a small force, and that the movement would continue to receive the assistance and attention of the Admiralty.

Mr. NORWOOD. . . . He regretted that he did not share the sanguine views which the hon. member for Hastings (Mr. T. Brassey) took of the state of the mercantile marine, which, from careful inquiry as well as from personal experience, he believed to have greatly deteriorated of late years. The physique, the stature, and the health of the men were by no means so satisfactory as formerly, whilst in seamanlike qualities and in subordination there was a decided falling off. . . . He had come to the conclusion that there ought to be in every large town an endeavour made to obtain youths at an early age to be trained as sailors. The shipowners would be most happy to support a movement of this kind.

Mr. Norwood.

Sir CHARLES ADDERLEY said the tenor of the last few speeches rendered it necessary for him, as being connected with the Board of Trade, to say a few words before the debate closed. He thought the hon. member for Hull (Mr. Norwood), who introduced what he might call the second part of the debate, exercised a wise discretion in bringing his subject forward in the discussion raised by the hon. member for Hastings (Mr. T. Brassey), rather than separately by itself, for it was germane to the subject of that hon. member's speech, and inadmissible as a distinct proposition. . . . Some means might, he hoped, be adopted which would enable us to apprentice boys taken from our training ships, not compulsorily, but by premiums, and the proposition of the hon. member for Hastings on that subject was a most important one.

Sir Charles Adderley.

SECTION XII.

***STRENGTH OF THE NAVAL RESERVE
IN 1882.***

DISCUSSION IN THE HOUSE OF COMMONS,
AUGUST 1, 1882.

Reprinted from 'Hansard.'

THE NAVAL RESERVE.

ON the motion for going into Committee of Supply,

Mr. Gour-
ley.

Mr. GOURLEY rose to call attention to the report of Admiral Phillimore on the Naval Reserve. His main object, he explained, was to ascertain how far the Admiralty were advancing in shipbuilding, and what improvements that department had effected as compared with the improvements introduced into their ships by the owners of our mercantile marine. In order to obtain the information which he desired to have, he would put a series of questions to the official representatives of the Admiralty in that House and, in the first place, he would ask how many ships had been furnished with breech-loading guns, and whether the Admiralty intended to furnish the whole or some of the ships composing the Reserve Squadron with guns of that kind, they being much superior to muzzle-loaders. Secondly, he wished to know whether any improvements had recently been made in the fuel-carrying capacity of our ships. In 1878, the Reserve Squadron, on the way to the Mediterranean, ran short of fuel before reaching Gibraltar. That, he contended, was a mischance which should be guarded against in the future. He should like to know whether the Admiralty had got rid of the old machinery in order that our war vessels might be able to compete with war vessels supplied with modern machinery. Also whether all our war vessels were furnished with torpedoes, and whether the officers and men were being educated in the use of torpedoes. We had a large number of young officers who had to retire against their will on half pay. Being without employment, they would in course of time become exceedingly rusty. He saw no reason why they should not be engaged in piloting our ships of war. As to the Coastguard service, he thought they ought to be exercised in the use of torpedoes and other submarine instruments of war, so that in the event of war they might be of good service in the defence of our harbours and coasts. Referring to the Naval Reserves, the hon. gentleman said we had never had more than about 12,000, although 30,000 was the

number that had been recommended as being expedient for that service.

Sir G. BALFOUR said there were in his constituency a considerable number of fishermen whose services might be obtained for the defence of the country if they could have an opportunity of being properly trained on board a vessel of war.

Sir G.
Balfour.

Sir T. BRASSEY, in replying on behalf of the Admiralty to the member for Sunderland, desired to express his great satisfaction that the condition of the Reserves had engaged the attention of his hon. friend. The hon. gentleman represented a seaport, at which upwards of 500 men in the Naval Reserve were annually drilled. He was closely connected with a district remarkable for its maritime enterprise. The hon. gentleman had, therefore, great opportunities of making himself acquainted with the requirements of the Naval Reserves, and any suggestions that he might offer with reference to the organisation of the force would receive the attentive consideration of the Admiralty. The terms of the notice being of a general character, it would not be expected that he should follow in detail the various interesting questions which had been raised. On some points however, he was prepared to offer explanations, which he hoped would be entirely satisfactory to the House. His hon. friend had particularly urged that the Coastguard should be sent to sea in small vessels, for the purpose of keeping up their seamanship. That suggestion could not be carried out without serious expense; and the limited training which would be given in a gunboat was not considered essential for the purpose of maintaining the efficiency of the force. The fleet men in the Coastguard were most carefully selected. The number of candidates had for some time past been in excess of, and now were at least sufficient to fill, the vacancies, and he was assured by Lord John Hay, who was specially charged with the supervision of the Reserves, that men were never admitted unless they had had sufficient service in seagoing ships to make them thoroughly efficient in their duties afloat. The well-trained men-of-war's men in the Coastguard would learn nothing in a gunboat that would tend to make them more effective when embarked in an ironclad. The drill at the great guns was perhaps the most important feature in their training, and great care was taken to maintain a high state of efficiency in gunnery. The Coastguard went through a complete course of gun-drill every year, and the rule was that in alternate years they were embarked in an ironclad squadron for an extended cruise. The testimony of Admiral Phillimore as to the condition of the Coastguard was in the highest degree satisfactory. The fleet

Sir Thomas
Brassey.

Training of
Coast-
guard.

Efficiency
of Coast-
guard.

men on shore formed, as he said, the main reserve of the Navy, and they were a force of which any country might be proud. As an instance of their general conduct, he mentioned that in 1878 they completed the crews of eight district ships and nine turret ships, and though they were embarked for 98 days in those 17 ships, not a single case occurred in which any one of their names appeared in the defaulters' book. The same favourable report could be given on every occasion when the Coastguard are embarked. His hon. friend had condemned the district ships as obsolete. It was, however, impossible that the fleet in commission should consist exclusively of ships of very recent construction. The district ships were well adapted for the work which they had to do, and the Admiralty were well advised in keeping the latest and most powerful ships in reserve in the dockyards, where they could be carefully preserved from deterioration, and where they could be commissioned at short notice in a perfect state of repair. Turning to the general condition of the Reserves for the Navy, at no previous period since the close of the Great War had we been so well prepared with the means of manning the fleet. The masted ships of former days had been replaced in the line of battle by mastless ships, armed with a few heavy guns, worked by mechanical appliances. The three-decker, with 130 guns, had a complement of 900 men and boys; the 'Inflexible' carried 400. Notwithstanding the large reduction in the complements the force of seamen available for manning the fleet showed a slight increase. The total number was 18,624 in 1871, and 18,991 in 1881; in the same interval the non-seamen class comprising the stokers and artificers had grown from 10,956 to 12,221. Thus, the total number of fleet men, exclusive of the Coastguard, was 29,580 in 1871, and 31,212 at the date of our latest returns. We had in 1871 6,421 men in excess of the total complements authorised for ships in commission. The corresponding number had since been raised to more than 8,000 men. In addition to the supernumeraries we had the crews of the flag-ships and receiving ships in the home ports. We had thus, at least, 10,000 in the fleet available for immediate disposal. On shore we had 4,000 seamen in the Coastguard, and, prior to the recent operations in the East, we had in the ports and in Ireland a splendid force of 6,000 marines. He fully agreed with his hon. friend as to the importance of a strong reserve of stokers. On June 25 the total number at the home ports, excluding First Reserve ships and the Channel Fleet, was 1,272. Even under the pressure which had recently been felt, it had not been necessary to stop the usual leave, or to break up the Reserves and take men

Reserve
squadron.

Strength of
Reserves.

from the harbour ships. It had, however, been arranged to increase the proportion of stokers in the Coastguard from 200 to 250, and to make additional entries, and to employ a few stoker pensioners at each of the naval ports. To enter stokers for the Naval Reserve is not considered necessary. In an emergency men can be obtained from the mercantile marine in sufficient numbers, and instruction in gunnery is not required as in the case of seamen. The Reserves, properly so-called, included Pensioner Reserve, 1,560; First-class Royal Naval Reserve, 11,800; Second-class, 5,600; Third-class, 150; and Naval Artillery Volunteers, 1,400. The total reserve for manning a war navy was not less than 40,000 men. With such a force the country should be well content, and the Admiralty would neglect no opportunity of adding to the strength and efficiency of our Naval Reserve. They had, at the date of Admiral Phillimore's reports, thirty batteries for the drill of the Coastguard and Naval Reserve. They had since ordered a battery at Barrow. They were rebuilding the batteries at Carnarvon, Fowey, and Hartlepool. Batteries had been ordered also at the Isle of Man and Kirkwall. The batteries at the Isle of Man and Kirkwall would be capable of drilling 1,000 men every year, and they had reason to believe that number would be forthcoming. It was equally interesting and gratifying to observe the marked success which had attended the efforts of the Admiralty to raise a force of Naval Reserve men in the western islands of Scotland and in the Shetlands. It was an additional evidence of our vast and varied resources as a naval power. On the occasion of his recent inspection the Duke of Edinburgh saw no less than 1,004 men on parade at Lerwick and 1,100 at Stornoway. He was much impressed with the seamanlike appearance of the men, and the admirable manner in which they went through their drills. Both divisions of the Naval Reserve were thoroughly efficient, and the Naval Reserve men would be the first to acknowledge that their efficiency was especially due to the admirable manner in which they were trained by the gunnery instructors from the 'Excellent' and 'Cambridge.' The Second-class Reserve, though not possessing the high qualifications required for the first class, were a most valuable body, thoroughly inured to the sea, and always within hail. They could be increased to any number which the Admiralty might consider necessary. With regard to the Royal Naval Artillery Volunteers, the Admiralty, while fully appreciating the patriotic feeling exhibited by large numbers who had applied for enrolment, was still unable to announce any final decision as to the organisation of the force. They awaited the report of the committee on the defence of the

Additional
Reserve
batteries.

Naval
Reserve in
Scotland.

Royal
Naval
Artillery
Volunteers.

commercial harbours before taking up the question. On the whole, he trusted that the House would be satisfied with the statement which he had made. As to numbers, the statistics were conclusive, and as to the quality of our seamen he was confident that the fine spirit of former days still lived, and would survive through every change which might take place in the ships and the armaments of the Navy. In the recent operations at Alexandria, both officers and men had proved themselves worthy of the great traditions of the British Navy. He could not conclude these observations on the Naval Reserve without paying a warm tribute of praise to Lord Cardwell and the other members of the Manning Commission of 1859. The scheme which had been adopted with such excellent results for the Royal Naval Reserve was originated by the Manning Commission. The creation of that force had secured us from future difficulties in manning the fleet in time of war, and had added materially to our naval power while imposing a comparatively moderate charge on the Estimates.

Captain
Price.

Captain PRICE thought the statement to which the House had just listened, very reassuring and satisfactory. He wished, however, to ask how it happened that the number of candidates for the Coast-guard service exceeded the number of vacancies. No doubt the hon. baronet was correct, but he had always understood from the report of Sir W. Tarleton that the reverse was the case. He quite agreed with Admiral Phillimore that the present Reserve of Coastguards was as low as it ought to be, and, indeed it might be said of our Naval Reserves generally, having regard to the great numbers of seamen who would be at the disposal of France in case of emergency, that their strength might very advantageously be increased.

PART VI.

NAVAL TRAINING AND EDUCATION.

SECTION I.

TRAINING OF ENGINEER OFFICERS.

SPEECH DELIVERED IN PARLIAMENT,

MARCH 15, 1878.

ON THE TRAINING OF ENGINEER OFFICERS.

House of Commons. March 15, 1878.

THE kernel of the bulky volume presented to the House by the Admiralty Committee on Boilers is to be found in the Appendix. The tables presented to that Committee by the great Steam Companies are indeed most suggestive. It was impossible that the Committee could devise a more efficacious system for the preservation of the boilers than that which has been adopted with such admirable results by the Inman, Cunard, and other Companies.

Inex-
perience of
junior
engineers.

It is the great defect of the present system that young engineers are appointed to seagoing ships, with no previous experience in the management of machinery at sea. In time of peace, when ships are only occasionally under way, and usually steam at a low speed, the chief engineer can give special attention to the instruction of junior engineers. He could not do so in time of war. In the dockyards many young engineers are attached to ships undergoing repairs, rather in the capacity of watchmen, for the prevention of fire, than as mechanical officers. The necessity for more practical experience in seagoing ships has been recognised by the Committees, which have been lately engaged in the reorganisation of the mechanical department of the Navy. While wisely advising that the engineer officers in commissioned ships should be reduced in number, and replaced by artificers, Sir Cooper Key's Committee proposed that junior assistant engineers, on leaving college, should be appointed to troop and store ships, in addition to the complement, for six months or longer.

Harbour
service.

From the nature of the duties it is impossible to give to the Navy in time of peace that practical experience in driving powerful machinery at a high speed in all weathers, which is obtained in the merchant service. Many engineers spend years attached to harbour ships, or in ships which are seldom under steam, and are still

more rarely driven at full speed. It should be the policy of the Admiralty to keep down the number of engineers, so that it should not exceed the strict requirements of the service, looking to the mercantile marine to supply the additional engineers, who would be required in the event of war.

An effort should be made to obtain for engineers further opportunities of acquiring practical experience, as supernumeraries, with some of the leading services in the mercantile marine. We should not allow ourselves to be deterred by the prejudices of the service from making an attempt to pass our naval engineers, for a limited period, through the mercantile marine. The plan has in point of fact been suggested by some authorities of great practical experience. In a paper by Mr. Ravenhill, read at the meeting of the Institution of Naval Architects, held at Glasgow in 1877, the following remarks occur:—‘All those who are in any way conversant with the Royal Navy must admit that such experience as the commercial marine affords cannot easily be obtained in Her Majesty’s ships. The transport service is limited, and the hours named for departure are not always adhered to. The mail steamers are timed to leave at a certain hour, and even if all is not in perfect order the chief engineer must be ready. Such a school can alone afford the training a seagoing engineer should receive, and I am sanguine enough to hope that the day is not far distant when some arrangement will be made between the Admiralty and our large Steam Companies, for a junior Royal Naval engineer to have an opportunity afforded him, if only for a period of twelve months, of obtaining experience with machinery, at times pressed to the utmost, in all seasons and in all weathers.’

Instruction of engineers in the mercantile marine.

Mr. Reed warmly supported Mr. Ravenhill’s proposition, saying that he thought it most desirable that the officers of the Royal Navy should be made familiar with the practice of the mercantile marine. He refused to admit that the suggestion was beset with insuperable practical difficulties. In time of peace naval engineers can never have an opportunity of witnessing such performances as those of the mail steamers, making regular passages throughout the year between Liverpool and New York, at an average speed sometimes exceeding 16 knots, or those of the ships which now accomplish the voyage between St. Vincent and Australia without easing the engines.

The ‘Servia’ and ‘City of Rome,’ now building for the Cunard and Inman Companies, will be driven across the Atlantic at 17 knots by engines of 8,000 indicated horse-power. No such duty was ever got out of engines. In no ship in the Navy can the engineer have

the same opportunity of mastering his art as in the engine-rooms of those noble steamers.

Expedition
in execu-
tion of
repairs.

The engineers employed in the great mail services are required not only to maintain the highest speeds at sea, but to examine and repair the machinery under their charge with the utmost possible expedition. In the Atlantic trade, large steamships run for years with intervals of a week, and sometimes less than a week, between their repeated voyages. Expedition in the repair of machinery is not required in the Navy in time of peace. It might be of vital importance in war. The young engineers of the Navy have much to learn, not only in developing the capabilities of machinery, but also in the management of boilers. Whatever may be the result of the scientific researches of the Admiralty, it would be an important step in advance, if only the practice of the Royal Navy were assimilated to that of the most successful services in the mercantile marine.

SECTION II.

*OBSERVATIONS ON THE TRAINING
OF SEAMEN.*

OBSERVATIONS ON THE TRAINING OF SEAMEN.

I.

Importance
of a good
system.

THE training of the officers and seamen of the Navy for their difficult and responsible duties is one of the most important questions with which the Admiralty has to deal. In his work entitled *Les Marines de la France et de l'Angleterre*, 1818-63, M. Xavier Raymond most justly says:—‘Quoi qu'on fasse, la puissance des navires sera toujours en raison des qualités et des talents que posséderont comme gens de mer les hommes qui les montent.’

Xavier
Raymond.

Baron
Grivel.

Another French authority, an officer of great distinction in the Navy, Baron Grivel, makes a similar observation. ‘De tout temps, comme dans tous les pays, comment douter de cette vérité que le personnel sera toujours l'âme du matériel?’

Admiral
Jurien de
la Gravière.

It may be admitted that we are better prepared in the *personnel* than in the *matériel* of our fleet, but naval officers will, nevertheless, agree with Admiral Jurien de la Gravière when he said:—‘Chaque fois que l'arsenal et la flotte seront en présence, qu'il faudra nécessairement immoler l'une ou l'autre, l'arsenal, je le déclare, aura tort à mes yeux.’

Rear-
Admiral
Rodgers.

The following observations occur in a letter from Rear-Admiral Rodgers, of the United States Navy, written during his residence as Naval Attaché in London:—‘There is nothing in naval matters so important as the subject of manning. Fleets may easily be built, hosts of swift steamers may be quickly taken from commerce and converted into tolerably efficient cruisers, but an efficient man-of-war's man cannot be improvised. Such hearts of oak are of slow growth and need much care. It is unsafe to look back to former days for anything to guide us in the future. Naval warfare of the olden time was rude and simple. The guns and the gunnery practice, the whole training of our seamen, the whole machinery of battle, were very different from what we see to-day. All nations

were much alike, and glorious deeds were done by the rough system then in vogue, when the skilful handling of the ship was the one thing needful. Steam, new ordnance, armour, torpedoes, earthworks, obstructive channels, all complicate the naval problem now. We need seamen—thorough seamen—as of old, but they must be sea soldiers also.’

The American *Army and Navy Journal*, in an article on modern naval warfare, published on November 10, 1877, concludes with the following observations:—

*Army and
Navy
Journal.*

‘The time is coming when the engineer and machinist, with their costly appliances, must stand aside to give room for the typical naval officer of all time, the daring sailor whose wits are never at fault, whose resources are endless. Armour and guns, machinery and machinists, can be had to order by paying for them, but the qualities of heart and brain that make up the ideal sailor can never be purchased, and will win their way to the front under any and all circumstances of naval warfare. That the battle of guns and armour has lasted so long as it has, proves little but the absence of the opportunity which makes a Blake, Nelson, Paul Jones, Decatur, or Farragut. They may all be lying hid to-day in the form of a rosy-cheeked lad at Annapolis, but when they come they will conquer as they used to do, whether their ships be of wood or iron, so long as they are swift, handy and heavily armed.’

The novelty and the variety of types introduced into modern navies tend materially to increase the difficulty of training. An able article on this subject, suggested by the loss of the ‘Grosser Kurfürst,’ appeared in the *Pall Mall Gazette* of June 7, 1878:—

*Pall
Mall,
June 7,
1878.
Loss of
‘Grosser
Kurfürst.*

‘The long peace of the seas, and the restless progress of modern naval invention, have combined together to reduce the supply of practical experience in the handling of ships of war to the lowest point, at the very time when the need of that skill, which only practical experience can give, is the most strongly felt. One can hardly reflect upon the conditions under which a modern ironclad is commanded, officered, and manned without feeling the magnitude of the contrast between the guarantees for the efficiency of our fleets in the old time and the guarantees for their efficiency at the present day. In bygone days, a ship’s company was a body of practical men, commanded by a practical man; the crew—man and boy, from the highest to the lowest—had learned their business, either by actual practice on board their vessel or under exactly similar conditions elsewhere. Each man, in proportion to his proficiency in his calling, approached to the model of his commander; the best as capable as

he of sailing, and, if need were, of fighting, the ship in which he served, and even the worst possessing his share of that "handiness" which was the salient quality of the best. But what is an ironclad, and what its company now? It is a floating theory, manned by experiments, for the old captain who finds himself on board a new model ironclad must be conscious that he is an experimental commander. From the captain to the cabin boy there is probably not a hand on board who knows by actual trial how the vessel will comport itself under this, that, or the other set of circumstances. As for the men, how, when, and where are they to acquire any such knowledge? Their early training, such as it is, has been begun, in all likelihood, on board a wooden ship; and, if their more recent experience is of the navigation of an ironclad, of what sort of ironclad, and after what type and model, and how long since did this experience begin? The difference in material, weight, and bulk is hardly greater between an old wooden frigate and the modern ironclad than is the difference of shape and structure between one ironclad and another. While the race of invention is continually going on, and masted and mastless, long and short, turreted and turretless vessels succeed each other, each claiming to be the "ironclad of the future," what is to become of the seaman of the future? There is little uniformity in the conditions under which seamanship now-a-days is to be learned, and if there were more, the rare and brief periods of practice, the chary and gingerly use (necessarily so, no doubt) of our ships of war, afford the sailor little of his former opportunities of learning his profession.'

The recent mysterious disappearance of the 'Atalanta' gives especial importance at the present time to the subject of training. The loss of two training ships manned by six hundred brave young seamen within the short period of two years gives occasion for grave reflection.

II.

The system of training which has been established in the British Navy was carefully described in a paper read by Lieutenant-Commander Chadwick at the New York Branch of the United States Naval Institute, on February 19, 1880 :—

Training
in British
Navy.
Lieutenant-
Com-
mander
Chadwick,
U.S.N.

‘The English Training Ships.

‘About 3,000 boys are kept in the English training ships, who undergo a course of training extending through fourteen or sixteen months. The ships employed are fine line-of-battle ships, two of which are at Devonport, one at Portsmouth, one at Portland, and one at Falmouth in Cornwall. The entries of this last year were 2,400, the number varying with the exigencies of the service. This number, however, is about the usual waste in the blue-jacket force of the British Navy, which amounts to between eighteen and nineteen thousand, out of a total of forty thousand men in the service. Each of these ships has attached to it a brig of about 400 tons, and a hulk, used for storerooms and as a receptacle for newly entered boys, where they stay a week and are gotten into shape before going on board the parent ship. No difficulty is experienced in obtaining boys, the Navy being extremely popular in England, so that the supply always exceeds the demand. The qualifications for entry are that the boy must be between 15 and 16½ years of age, must be of good physique, and must know how to read and write. Stress is laid upon character; no persons from reformatories, or who have been committed by a magistrate, being admitted.

‘The schooling is limited in extent, but within the limits is thorough. Nearly all the boys are excellent penmen, good readers and cipherers. The practical training consists in learning all the work and duties of the sailors. . . . Daily exercises of spars and sails take place, except in the winter months; handling boats under sails and oars is frequent; cutlass drill, infantry gymnastics (which is

taught by a non-commissioned officer of marines), truck gun exercise, and swimming are all thoroughly well taught.

‘All these exercises, excepting those of sails and spars, are under the immediate direction of the trained men or petty officers, who are detailed as instructors in seamanship. Each of the lieutenants on board has charge of certain subjects, but the men who do the instruction work under them are a class absolutely unknown in our service, and whose existence in that of England is one of the greatest evidences of the benefits of their system.

‘The scholastic and practical training on board the parent ship lasts about a twelvemonth, after which is given a six weeks’ sea training in the brigs, and finally a ten weeks’ course in gunnery on board the gunnery ship, after which the boy is ready for service. . . . Great care is taken to amuse and instruct outside the regular routine, a large sum being allowed, which is mainly used for the purchase of games, bats, balls, &c., and for such books and papers as boyish taste demands. . . . Fifty-three days’ leave are allowed during the year, divided into two periods of sixteen days each and one of twenty-one. One afternoon a week is set aside for general liberty, and all whose relatives live near enough to the ship are allowed to go home on Sunday. . . . The whole method of discipline is humanitarian: there are as few restraints and punishments as possible, and, altogether, I cannot imagine a better school in which to bring up young men of this class. . . .

Gunnery.

‘The ten weeks’ course on board the gunnery ships is thought by many to be too long; it would be better, too, if this were made a part of the course on board the training ship proper, or in a vessel which was entirely under the control of the commander of this ship. . . .

Small
arms.

‘Much more attention is given to small arms than with us, and the British sailor is turned out a very respectable soldier. For one, I am a strong advocate of much infantry drill, if it is properly given. I cannot see how it can injure the boy or man in any way as a sailor, and it affords a convenient and pleasant variety from sail drill. It need never be so much used as to conflict with the latter; there is no better means of discipline; it affords a good setting up, makes a handier and more capable man, and I regard it as altogether an indispensable adjunct of modern training. There is no reason why a ship’s company of 500 men should not be able to land at any time a battalion of 300 perfectly equipped and ready to take the field. . . . The universal praise accorded the blue-jackets in the late Zulu campaign says more than any argument on the subject. Where the

soldier was helpless, the sailor was full of expedients. He was always sheltered, always had food, and was always in good fighting trim. I think it would be far wiser, instead of decrying efforts to extend our usefulness by saying that *this* and *that* does not lie in our way, we should take pride in being able to do so much.'

'The long enlistment customary in the English service gives a great advantage. The boy is entered to serve until 28 years of age, and if he then re-enlists and serves until he is 38, he may retire with a pension of a shilling or more a day. Nor do they retain the boy in his rating as boy any longer than possible. At eighteen all are rated ordinary seamen or ordinary seamen second class, and assume a man's position on board ship.

Terms of enlistment.

'The homogeneity of the British service, arising from the fact that all their blue-jackets are passed through their training ships, and from the fact that the training given in each ship is exactly the same, cannot be too much commended. The captain of the "Impregnable" is the commodore of the squadron, having under the Admiralty entire control.

'Everything pertaining to the system is referable to him. . . . There can be no real success in such a scheme without such a subordination to one head. It is better to have one method with some faults than to have the conflicting schemes of individuals, though each in itself may be more perfect than the one general scheme.'

It will be apparent from these lengthened extracts that our system has received the highest commendation from those most qualified to judge. In the letter, from which I have already quoted, Admiral Rodgers says:—

British system commended by Rear-Admiral Rodgers.

'You have met the difficulty manfully in your training ships, your gunnery ships, and your system of continuous service. There is no body of men in the world to-day comparable with your continuous service men. I wish with all my heart that my countrymen would follow your example. To inscribe the fishermen, the boatmen, and the whole maritime population, to give them a certain naval organisation and naval training, would be an enormous addition to your maritime strength.'

The Secretary of the United States Navy, in his Report for 1879, confirms the testimony of Admiral Rodgers. The British Navy has the reputation of being unsurpassed in its *personnel*, and it has acquired this distinction mainly by means of its training system.

The course of instruction in the German Navy was described in a letter published in the *United Service Army and Navy Journal*, of New York, on July 18, 1877:—

Training in German Navy. Letter to Army and Navy Journal.

'The corvette "Nymphe," Captain von Kall, which was at

Hampton Roads during the month of June, is one of the ships of the German Navy used in training apprentices for the regular service. Having made the acquaintance of her officers, and from them learned some of the principal features of their system of instruction, your correspondent asks a place in your columns that those interested in training boys for our own Navy may know the course pursued by the German authorities.

'Origin of the German Apprentice System.—About three or four years ago, Captain Schering, of the Navy, succeeded in establishing a system of training boys for the regular naval service, which has so many excellent points that it is not surprising to know it has thus far worked well. Captain Schering's plan is to enlist 140 boys every year. As the system is just entering its fourth year, there are now something less than 560 boys in course of training. The active list of the German Navy numbers about 6,000 men. The boys are selected by the recruiting officers with great care. Not less than 500 boys annually present themselves as applicants, and from this number the selection is made. Applicants must be able to read and write, must not be more than seventeen nor less than fourteen years of age, and must bind themselves to serve twelve years, if necessary.

'The first Six Months.—When 140 boys have been enlisted, they are divided into two parties and sent into two cruising brigs to the Baltic, where they spend the summer. Each brig has the necessary petty officers and about twenty seamen. These men are carefully selected—the object being not only to secure competent seamen, but also men of good morals—men who shall not teach boys the vices of the sailor before they have had an opportunity to learn something of his virtues. They are taught seamanship and gunnery, and they are also instructed in reading, writing, arithmetic, and geography. Each officer instructs his own division and takes as much pride in their progress with their books as in their advancement in the use of small arms or their skill in handling great guns. The idea is not lost sight of that the qualification for good sailors includes not only a thorough knowledge of ropes and sails, but an intelligent understanding of the elementary principles of a common school education.

'The second Six Months.—After a six months' cruise in the Baltic both crews are sent ashore in company, and spend the winter in barracks prepared for them. With them are four officers of the line, a chaplain, and a few petty officers. During the winter more especial attention is given to the military part of their education—for they are not only to be sailors but fighting sailors as well. At the same time their studies are continued under the direction of a chaplain, and,

besides the branches taught in summer, they have history. Good readers among the boys are encouraged to read aloud to the others from some work on German history; the idea being to teach them pride in their profession and pride in their national character as well. They are also instructed in singing. In this way the time spent at the barracks passes pleasantly and profitably. This completes the first year.

'The Long Cruise.—The next eighteen months are spent in a cruising ship at sea. Vessels of the "Nymphé" class are selected, and the same officers who instructed the boys up to this time are sent to cruise with them. Now the work of making sailors commences in earnest. A training ship means a working ship. The boys are drilled frequently, examined regularly, and constantly kept busy. They must learn all parts of the ship equally well, and in order to ensure this a new quarter and station bill is made out every three months. During the last three months the boys must depend on themselves, instruction being given to the petty officers at this time to assist in all manœuvres but not to direct. A healthy competition is encouraged, but not to make one part of the ship or one division of the ship more active than another. Indeed this is prevented in a great measure by the frequent changes of stations before alluded to. There is a practical examination every three months, and a more thorough one every six months. Thus passes a year and a half; the boys have now been in the service two years and a half.

'The last Six Months.—The last six months of their three years' course is spent at Kiel, the great naval station of the Germans. The boys are sent to the gunnery ships, where they are instructed in working those guns which they have not seen on their cruising ships. At the expiration of this time they pass their final examination, and are rated as seamen of the first class, or as able seamen. This completes the three years' course, and they are now ready for the general service.

'On Probation.—As much as possible the boys are kept together when drafts are made, so that, though they have ceased to be apprentice boys in one sense, they may not lose their identity. At the end of one year they are examined again, and, if competent, morally and professionally, they are rated petty officers. It is expected that they will make the best petty officers in the service. As soon as enough have been graduated, it is designed that the training ships shall take their necessary petty officers and seamen from the graduated apprentice boys. If boys display an aptitude for study they are taught English and such other branches as they elect,

up to a reasonable point. No fear is entertained of educating them out of the service, for if they leave it they are still citizens, and Germany believes in education for all classes. Other boys, fond of machinery, are encouraged to become machinists; if handy with tools, they are encouraged to become carpenters or sailmakers; they are also eligible for appointments as boatswains and gunners, but are not eligible for any commissioned office either in time of peace or war.

‘Prominent Features of the System.—One marked feature is in the selection of officers. Only those are selected who believe in the system, who have faith in the boys and will take an interest in them. Once assigned to a class of boys the officers are not changed until that class has graduated. All officers are equally interested in the entire class, the frequent changes preventing favouritism almost entirely.

‘Another prominent feature is in the selection of the petty officers and seamen, and in the marked attempt to keep the boys from bad men and bad influence. At first boys spent their third year at sea, indiscriminately assigned to vessels actually cruising. The hazardous experiment failed entirely; the moral stamina of the boys was not strong enough to withstand the unwholesome influence of the average ship’s company, and the project was abandoned. All possible helps to morality are afforded. After the first six months they are never without a chaplain. The Protestants are all obliged to attend church, the Catholics are excused if they wish, and wholesome restrictions are thrown around them.

‘A third feature, and a most excellent one in the opinion of your correspondent, is that, during the first two years no boy is allowed to use tobacco in any form. Boys are permitted to smoke during the third year, but not to chew tobacco. Even then the tobacco is served out by the first lieutenant, who takes care that no boy shall use too much, and regular smoking hours are fixed as on all men-of-war. The too commonly received opinion that to chew tobacco, swear, and be tattooed with Indian ink are the first qualifications of a sailor, is not entertained on board training ships in the German Navy. The fresh, bright looking faces of the German apprentice boys, when contrasted with the pale, sallow faces of too many of our own apprentice boys, is a powerful argument that something ought to be done to suppress the use of this powerful narcotic among our young seamen.

‘A fourth feature is the system of rewards and punishments. For rewards recourse is had to honourable distinctions. Boys of

marked good conduct are given badges, which they wear so long as they maintain their good standing. If in addition to this they show themselves efficient they are rated boy petty officers. The punishment is light, but it should be remembered that the boys are selected with much care, and that boys who show a marked disposition to be bad are sent home in disgrace for dismissal—the idea of training ships being educational and not reformatory. There is no solitary confinement, no deprivation of liberty on shore, except perhaps for a single week, no irons, single or double. But there is flogging! Yes; for specific crimes, such as lying and petty theft, a boy may be flogged. The boys of the “Nymphe,” though they have been in the service more than two years, have never incurred the punishment. The simpler punishment, such as standing on deck, extra duty, and temporary deprivation of liberty on shore, have been found sufficient. The most severe punishment is sending them to Coventry. During the time a boy is in Coventry, he wears a different uniform from the rest, eats alone, sleeps by himself, no one is permitted to speak to him, nor is he allowed to speak to anyone.

‘The boys are given day liberty twice a week; under no ordinary circumstances are they allowed to spend the night on shore. They are sent always under the charge of one of their own petty officers, who is answerable for their conduct and for their safe return.

‘*Practical working of the System.*—Such is the design and such the leading features of the system. The only point remaining is its practical working. Of this I can only judge from this one vessel, but if the “Nymphe” be a fair specimen of the German training ship, then the Germans have succeeded admirably. The work of the boys on board is remarkable. Certainly it is all that can be wished. Their sail drills were pronounced by our own naval officers as admirable in every respect. The best-informed army officers pronounced their duties in gunnery and small arms “exceptionally fine.” Visitors at the Roads spoke in the highest terms of the “Nymphe” and the fine-looking lads on board.’

The ‘Nymphe,’ to which the writer refers as having lately visited the coasts of the United States, was launched in 1863. She is a corvette of 985 tons, and 800 indicated horse-power, capable of steaming ten knots, and manned by a crew of 190. It may here be mentioned that, in the German Navy, pay at the rate of 1*l.* per month is granted to a seaman on being rated, and that, after three years’ service, an additional payment of 2*l.* is made for each consecutive twelve months served, until the maximum monthly pay of 1*l.* 8*s.* is reached. Before a seaman is advanced to the lowest petty

‘Nymphe,’
training
corvette.

Pay, Ger-
man Navy.

officer's grade, which is that of quartermaster, he must have served afloat for four years, and hold a certificate of superior knowledge of every branch of a seaman's duty on board a man-of-war. To become a second-class petty officer, a man must have served six years at sea, during one of which he must have held the rating of quartermaster, and have been captain of a gun. He then is given the grade of *boatsmanns-maat*, or second master of manœuvres of the second class. And if he obtains a special certificate at the gunnery school, he may be rated *fenerwerks-maat*, a kind of gunner's mate. Non-commissioned officers of marines are also enabled to reach this grade, if they have been embarked for two years, and can pass the examination required. There are also higher grades, which can be reached after longer service, but pay in every case is much lower than that of similar grades in the British Navy.

Training in
German
Navy.

Having regard to the present strength of the German Navy, a large proportion of the fleet in commission is detailed for training purposes. Under recent arrangements two brigs are employed in training young seamen in the Baltic on first joining the service. In their second year the young seamen are sent afloat as we have seen in the corvette 'Nymphe' for a more extended cruise. Two corvettes cruise with apprentices in the Baltic and the North Sea respectively. The frigate 'Niobe' is employed as a training vessel for cadets, and our ironclads are formed into a squadron for evolutionary exercises.

Lieutenant-
Commander
Chadwick,
U.S.N.
Training in
French
Navy.

Lieutenant-Commander Chadwick, in the same paper which has already been quoted, makes the following observations on the training systems established in the French and German Navies. With regard to the former, he says:—"The French methods are essentially different from those of the English. They have schools for each of the branches of their service, the young men selected from the *divisions* (barracks) being first passed through the "Bretagne," a large line-of-battle ship, in which were 1,378 under instruction last summer. The course here lasts from four to six months, after which further instruction is undergone at other ports. There is also a large liner, the "Austerlitz," in which are 800 boys, who are entered at thirteen or fourteen, and are kept until sixteen, and who then enter the "Bretagne" as part of the recruits. Both these ships are at Brest. There is here likewise a school similar to the Greenwich Hospital School, in which 400 sons of sailors, taken in some cases as early as seven, are educated for the Navy. The schools for specialists, to which the novices are finally distributed, are the gunnery school at Toulon, the school of musketry at Lorient, and the two cruising frigates for the instruction of topmen and quartermasters.

‘There is also a torpedo school at which men are instructed, a school for coast pilots, a normal school for naval schoolmasters, a school for firemen and machinists, for dockyard apprentices, and a school for gymnastic instructions. The system of promotion in the French Navy, amongst the men, is most excellent. In all the corps of specialists, brevets or certificates are given after passing an established examination, which entitle the holders to precedence of selection for petty officers’ positions in their especial branches. These examinations are held by regularly constituted boards of officers, five officers usually being upon each; in most cases there is a fixed schedule of questions published by the Ministry of Marine, covering the entire subject, and certain percentages of marks are necessary to establish the claim of the applicant to a first, second, or third class certificate.’

The report of the Secretary of the United States Navy for the year 1877 refers in some detail to the measures which had recently been adopted by the Department for the improvement of the training of seamen for the American Navy. A law had been passed, authorising the enlistment of boys between sixteen and eighteen years of age, to serve in the Navy until the age of twenty-one. At the date of the report in question there were 458 boys under training, and 324 had passed through the training ships into the general service. The system had worked satisfactorily, and a strong recommendation was made to Congress to authorise the enlistment of 750 boys, over and above the complement of the Navy, which, under an Act of Congress, had been fixed at 7,500 men. The recommendation was adopted by Congress, and an Act was passed authorising the enlistment of boys, and raising the total strength of the Navy to 8,250 men and boys. The limits of age for enlistment have been fixed by the Department at from sixteen to seventeen years. Each boy is required to be able to read and write, and must be physically adapted for the work of a seaman. An outfit is provided, and wages are paid at the rate of 10½ dollars per month. The year is divided into two parts. During the winter, the training ships are moored at some naval station, where there are facilities for work in the rigging and sail lofts, and for drilling on shore and under cover. The boys can then be instructed in company movements, and in battalion drill. It is found, also, that in the light and airy rooms such as are available at almost every Navy-yard, the instruction in broad-sword and boxing can be carried on much better than on the decks of the ship. The occasional change from the ship to places on shore is often very grateful to boys naturally restive under the con-

Secretary,
United
States
Navy.
Report
for 1877.
Enlistment
and train-
ing of
boys.

finement of ship life. Experience shows, too, that it is better to accustom young lads to this radical change of life gradually. Hence it has been found very desirable to give at least one hour each day to the playground, whenever the weather and other circumstances permit, and encourage the boys to engage in pastimes and field sports generally. The long evenings of winter are generally devoted to amusement and popular lectures, and philanthropic gentlemen are often invited to address the boys. Two evenings in the week are given to singing.

The training ships, as it has already been said, undertake extended cruises in the summer months. The school ship 'James-town,' stationed at San Francisco, has a complement of one commander, seven officers, twenty men, and 200 boys. The summer cruise extends as far as the Sandwich Islands.

Report,
Secretary,
United
States
Navy, 1879.

The last report of the Secretary of the United States Navy contains a detailed report of the practice cruise of the sailing ship 'Constellation' in 1879. The cruise extended over a period of three months. Between the Chesapeake and Halifax, the 'Constellation' visited a considerable number of the intermediate harbours, weighing and coming to an anchor under sail, and experiencing every variety of weather, including a considerable amount of fog. Every midshipman of the first class had tacked ship once. Boxhauling and wearing, both in a light breeze, a fresh breeze, and gales, had been practised. Captain McNair justly remarks, that the varied cruise of the year 1879 had been far more agreeable than the monotonous repetition of evolutions in the same dull dreary cruising ground, while the best instructions in pilotage, navigation, and seamanship had been obtained in working a ship under sail in narrow passages, surrounded with dangers.

III.

Having described the course of training in the British and the principal foreign navies, our attention may appropriately be directed to certain defects in our system, which have been criticised by high authorities.

Defects in the training for the British Navy.

Captain Wilson, formerly superintending officer of the training establishments, called attention to this subject in several lectures at the United Service Institution.

The facts, with reference to the sea service of the boys under training for the Navy, were brought together in his paper read on July 2, 1875.

‘ With the establishment of a permanent force, the conditions of service became totally changed ; and, to meet such an altered state of affairs, other radical changes were, and still are, necessary to make the whole system work harmoniously and efficiently. To begin with the boys : there are five stationary training ships under commanders, with an “ inspecting captain,” who has the general supervision of the whole. In these vessels, three thousand youths are supposed to be trained annually, but as the supply has never yet equalled the demand, the number has hitherto been from two to three hundred short of the vote. The boys, if their parents consent, are taken at from fifteen to sixteen and a half years of age, after having undergone a most stringent physical examination. These requirements being satisfied, if they can read, write, and cipher fairly, and have never been committed by a magistrate, they are allowed to engage for ten years from the age of eighteen. On completing one year’s training, and after passing an examination, they are rated “ first-class boys,” when a certain proportion are put through an advanced course of gunnery, either in the “ Boscawen ” or in the gunnery ships, and about one half of them are also sent on a six weeks’ cruise in one of the five training brigs. A roster is kept on board the “ inspecting captain’s ” ship ; and, as far as circumstances will admit, they are drafted in rotation by him. Taking one with another, boys are two years from entry until

Paper by Commodore Wilson, July 2, 1875.

rated as men, or, in other words, their average age on entry is sixteen ; and, taken throughout, they have about two months' sea service in the fleet as boys. Though our seagoing ships carry as many boys as they can stow, there are still from 1,500 to 1,700 constantly on depôt, waiting their turn for draft. This delay is much to be regretted, and can only be avoided by keeping sufficient training ships at sea to provide for that proportion of boys (about 1,400) which are due to the men kept in our home ports. Whilst thus waiting, a considerable number of them reach their eighteenth year, and are by order rated men ; thus the 1,200 ordinary second class may be taken to represent a body of sailors who have never been at sea at all.'

*Army
and Navy
Gazette.*

Captain Wilson's recommendations were warmly supported in the service journals. The *Army and Navy Gazette* described 'the receiving hulks, flag ships though they are, as simple abominations. Boys from the training ships, clean, healthy lads, full of devotion to a sailor's life, and burning to go to sea, are sent into these hulks to await their turn for drafting into a man-of-war, and in six months' time these young ordinaries are lucky if they have escaped degradation, both moral and physical ; yet these ships are generally commanded by experienced officers. There would almost appear to be something intrinsically fatal in a hulk, and there we must leave it. Stories in proof of this we might relate, but we refrain. It is enough to say that the riot and license which, undoubtedly, existed in the hulks in the old revolutionary war, still leave their traces behind.'

*Proportion
of seamen
in harbour
ships.*

Passing from the boys to the seamen of the fleet, Captain Wilson proceeded to show that the proportion of time at sea was not sufficient to maintain the Navy in a thorough state of efficiency :—

'The combatants consist of seamen and marines, but I will at first confine myself to the former. It will be seen from figures I have already given that we have but 12,000 able-bodied men, which is surely as low a number as the most rigid economist would dare to advocate for the "first naval Power of Europe." I contend that they, and they alone, are the seamen of our fleet. The custom of speaking of our men as "pure blue-jackets" in Parliament is misleading, for all naval men know how anyone, from a cab-driver to a crossing-sweeper, may be included under that designation, whereas, for a man to be rated an A.B., he must be a sailor of some experience and knowledge of his profession. However good and useful ordinary seamen may be, they are at least but learners, and should, therefore, always be as much distinguished from the finished sailor as boys are from them.'

‘I will now proceed to analyse the services of our seamen. The fleet consists of seagoing and harbour ships, which may be roughly divided as follows :—

Regular men-of-war, from sloops to ironclads	72
Small class gunboats, yachts, tugs, brigs, and surveying vessels	82
Turret ships	1
Troop and store ships	16
Stationary and coastguard ships	49

Analysis
of employ-
ment of
seamen.
Com-
modore
Wilson.

‘In seagoing vessels we have only 10,500 blue-jackets of man’s rate, the remaining 8,000 are in the harbour ships. Such being the ordinary state of the service, it follows that our men cannot have more than eleven and a half years at sea, such as it is, out of their twenty. Dividing the twenty years into four periods of five each, I find the standing of our men to be,—10,000 of under five years’ service, with an average of eighteen months at sea and twenty and a half years of age; 4,270 of between five and ten years’ service, with an average of four and a half years at sea; 2,603 of from ten to fifteen years’ service, and seven and a half years at sea; and 1,816 of between fifteen and twenty years’ service, and ten and a half years at sea. This calculation is based on the supposition that each man has exactly the same amount of sea service, which is practically not the case.’

An opinion to the same effect was expressed by Admiral the Honourable Sir Frederick Grey, in the discussion which took place at the Institute of Naval Architects in 1875, on a paper on unarmoured vessels by the present writer. It was pointed out by that gallant officer, whose long experience at the Admiralty made his opinions the more valuable, that the Navy comprised only about 18,000 continuous service blue-jackets, and yet, small as that force was, we had not cruisers enough to give them the practice afloat which was necessary to keep them efficient.

Sir
Frederick
Grey.

The opinion of Sir Frederick Grey was confirmed by Admiral Ryder in the discussions at the United Service Institution on the Naval Prize Essays of 1878. While approving of the training in the training ships, he pointed out that a difficulty was experienced in sending the young seamen out to the ships on foreign stations, after their course of instruction in the harbour ships had been completed. There seemed to be a difficulty in connecting the training ships at home with the seagoing ships on foreign stations; the result being that when their training was completed, the boys were frequently kept waiting for many months in the receiving ships at Portsmouth and Plymouth.

Admiral
Ryder.

Tenders to
flagships.

The same observations apply to the young officers of the Navy. A large number are always appointed to harbour ships in the home ports. Others who are nominally at sea are attached to ironclads and flagships which are frequently detained for extended periods in port. It is a subject of general complaint amongst captains in the Navy that the young lieutenants are too often without the experience which they ought to have before they are allowed to take charge of a watch. As they go on in the service they learn their work ; and probably no Navy has ever possessed a more competent body of officers than the senior lieutenants of the present day. I venture to suggest the expediency of attaching to the receiving ships at Devonport and Portsmouth, and to the barracks at Sheerness, a certain number of cruisers, capable of being handled under sail in the Channel. The employment of such vessels would not merely increase the efficiency of the Navy, but might lead to great economy in the maintenance of the Fleet. If seamen were sent to cruise in training vessels, costing comparatively little for maintenance, it would not then be necessary to have so many ironclads in commission. A certain number of ironclads would be required to form an evolutionary squadron and to protect British interests in distant waters to which reinforcements cannot be despatched on an emergency. The remainder of the ironclads should be kept in the First-class Reserve in the home ports, and in such centres of naval power as it might be necessary to establish abroad. Those ships should be in perfect readiness for immediate service. The crews of the cruising vessels should go through a complete course of gun drill on board the ironclads in reserve every year. They should also have their quarterly firing exercise in an ironclad, which should be commissioned as a gunnery ship and which should visit each of the home ports at stated intervals. A similar plan might be adopted in the Mediterranean.

Objections may be urged to the system of training here proposed, on the ground that it will deprive officers of the opportunity of serving in ironclads. To this it may be replied that under the plan actually adopted the necessary experience is very slowly acquired. Ironclads which can only make voyages under steam are naturally kept very much in harbour. The experience of a three years' commission, as regards the handling and manœuvring of the ship, might have been gained in six months, if the time had been devoted mainly to such instruction, and the ship had been constantly at sea. By appointing officers in more rapid rotation to the evolutionary squadron, and keeping the ships more actively employed, it might be possible, while reducing the number of ships in commission, to give officers

serving for a short time in the evolutionary squadron the experience they at present derive from a longer commission in ships less actively employed.

The loss of the 'Vanguard' was a striking illustration of the serious consequences which must result to the Navy if no steps be taken to secure more seagoing experience for our younger officers.

Loss of
the 'Van-
guard.'

In the debate in the House of Commons, on February 25, 1876, on the loss of the 'Vanguard,' the compiler spoke as follows:—

'He had long been convinced that the Admiralty kept too large a proportion of our young officers and seamen in harbour ships, and, in his view, the necessity for increasing the number of seagoing ships in commission was conspicuously brought out in the course of the proceedings at the court-martial at Devonport. In order to show the urgent need for more experienced seamen in the Navy he would refer to some details of the evidence given by various witnesses. Was it not unsatisfactory that the men who were placed in the most responsible positions, such as look-out men and signal men, were only ordinary seamen? An ordinary seaman was stationed as look-out man at the top-masthead of the "Vanguard" who had been only eight months in a seagoing ship. At the top-masthead of the "Iron Duke" there was also an ordinary seaman who, when asked how many cables' length the "Vanguard" was distant from the "Iron Duke" when last seen, replied that he did not know the meaning of the word cable. The entire management and manœuvring of a ship by the officers in command might depend on the experience and judgment of the men on the look-out aloft, and if they were not efficient the gravest consequences might ensue. The case of Lieutenant Evans had repeatedly been mentioned, and it must be a source of great regret to find that a lieutenant placed in charge of one of our most costly ships on a critical occasion was an officer who, although he had held a lieutenant's commission for three years, had only been three months in a seagoing ship. The seaman placed as a look-out on board the "Vanguard" was an ordinary seaman, and it was in consequence of his reporting a ship ahead that the "Vanguard" stopped and the collision followed. It turned out that this seaman had been treated twice for blindness in the right eye, which was the organ directed to the supposed ship. The state of the signal department in the "Iron Duke" was most unsatisfactory. Not only was the officer of signals imperfectly acquainted with his duty, but the signalman whose duty it was to report signals, and whose efficiency depended on the full possession of the faculty of hearing, was stone deaf in one ear. The stoking department in the "Iron Duke" was

also in an inefficient state. In short, the results of the inquiry as to the loss of the "Vanguard" had revealed the fact that there were a great many inefficient seamen in the fleet, and we had not been without a warning on the subject from other sources. Within the last twelve months two very able lectures on the condition and training of the fleet had been delivered by Captain Wilson, who had just completed a term of three years' service as captain in charge of the training establishments of the Royal Navy. It had been shown that they only trained enough boys to keep up the number of seamen voted for service in the fleet, and yet while the number of boys was kept at the minimum the seagoing ships in commission could only take three-fifths of those youths to sea who left the training ships, so that the remaining two-fifths, instead of being sent to sea, were sent to harbour ships. Having shown some of the evils of the present system, he might be asked what remedies could be applied. The initiation of the Flying Squadron by the right hon. gentleman the member for Pontefract, and the annual cruise of the Channel Squadron, which he was delighted to hear it was in contemplation to extend in future years, were steps in the right direction. It was however to be regretted that so many fine seamen were detained in harbour ships. Something should be done with the view to give more training at sea to the young seamen of the fleet. He trusted that the Admiralty would feel justified in building vessels of a class well adapted for instructing men in seamanship, and which could be attached as tenders to our present training ships at Portsmouth and Plymouth. It might be said that to send officers and men to sea in sailing ships would be an imperfect preparation for service in ironclads; but many of the qualifications that were necessary for the management of an ironclad could be acquired in vessels that would be built, equipped, and maintained at much less cost to the country. It had been pointed out by the Secretary to the United States Navy, in his report in 1869, that an ironclad, which was always under steam, was a bad school of seamanship, and that promptitude and nerve were not so constantly brought into play as they were on board a large sailing ship. In conclusion, he would remind the House that our Navy presented an illusory appearance of strength, unless the seamen voted for the service were thoroughly trained in their duties at sea.'

Seamen
must have
a thorough
training
at sea.

It will be our duty to take every precaution which science and experience can suggest, but no naval administration can be deterred by the apprehension of danger from sending young seamen afloat to learn the duties of their calling in the school of practical experience, and in perpetual conflict with the winds and waves. The great

commanders of past times attained to the highest degree of excellence, as seamen and naval tacticians, by incessant cruising. When Nelson landed at Gibraltar in June 1805, on his return from the famous pursuit of Villeneuve, from the Mediterranean to the West Indies, and from the West Indies back to the shores of Europe, he made the following entry in his diary:—‘I went on shore to-day for the first time since June 1803, and from having my foot out of the “Victory” two years wanting ten days.’ Out of fifty years’ service Lord Collingwood was actively employed forty-four years, and was on one occasion twenty-two months at sea without dropping anchor. It was by their constant practice at sea, stimulated by the perpetual anticipation of battle, that the illustrious officers of the great era in our Navy became such incomparable seamen.

Lord Nelson.

Collingwood.

The loss of the ‘Atalanta’ and ‘Eurydice’ has shown that the ships were of a type not suited for the service for which they were selected. It does not point to the conclusion that our officers and seamen should be preserved from the perils of the sea by remaining in harbour.

Type of training ships must be carefully considered.

IV.

Mr. Gos-
chen.
'Aurora'
fitted out.

Mr. Goschen was fully impressed by the representations that were made to him of the necessity for providing training frigates. The steps which were taken were described by Admiral Willes in the discussion on Captain Wilson's paper at the United Service Institution in 1875. Mr. Goschen determined to commence a training system, and the 'Aurora' was fitted out. There were strong prejudices against the system in the Navy. The 'Aurora' was paid off, and no other ship was commissioned to take her place, although it had originally been intended to employ two ships in the training service, which would have taken about 600 or 800 ordinary seamen and boys.

Mr. Ward
Hunt.

Brigs sent
to Lisbon.

'Eurydice.'

Mr. Ward Hunt and Mr. Smith were equally convinced of the necessity for providing ships for the training of the large number of boys whom it is necessary to enter to fill up the complement of seamen in the Navy. It was determined, not only to send out the training brigs in the winter to join the Channel Fleet at Lisbon, but to provide another ship to supplement the accommodation furnished by the brigs. The 'Eurydice' was brought forward for the service.

*Broad
Arrow*,
March 23,
1878.

No risk was apprehended from the employment of that vessel. The following extract from the *Broad Arrow*, of March 23, 1878, gives expression to the general sentiment of approval with which the course pursued by the Admiralty was regarded throughout the Navy:—'Every one in the service will be glad to notice that Mr. Smith has fully recognised the desirability, if not the absolute necessity, for establishing such a system of seagoing training as will be the means of making our lads good sailors and good men. There cannot be a doubt that much of the trouble we meet with on the part of our young seamen is attributable to a faulty system, which keeps them loafing about at the home ports, waiting for draft to a seagoing ship after passing out of the training ships. That it should be possible to have young men rated as ordinary seamen, who have never been outside our principal ports, except for a summer cruise in a brig, is a direct

condemnation of the existing state of affairs. To establish a more extensive training system, including such ships as the "Eurydice" and "Atalanta," may cause an immediate outlay, but it will be repaid to the country by increased efficiency in that service to which she has to look as her first line of defence, and will be the means of retaining many who otherwise become demoralised at the ports, and develop into habitual leave-breakers, unable to drag themselves away from the associations of the pothouse. Such characters are most decidedly in the minority, but yet they do much to bring discredit upon the service and find their way to gaol, and are often dismissed as incorrigible for their constant offences against naval discipline.'

V.

Sailing
ships for
training.

In selecting sailing ships as the most suitable for the purpose of training seamen, the Admiralty were adopting the course which had been recommended by the finest seamen of our day both in the Royal Navy and in the mercantile marine, and were carrying out for our own Navy the system generally pursued by other naval Powers.

Cause of
the loss
of the
'Eurydice.'

We know the cause of the loss of the 'Eurydice.' She was struck by a squall of unusual violence, and was carrying a heavy press of canvas; but several measures might have been adopted, which would probably have ensured the safety of the ship. If the 'Eurydice' had been kept before the wind, when the squall struck her, it is probable she might have escaped. If the lower deck ports had been closed, she would not have capsized, even when exposed to the full force of the squall, with the wind on the beam, and with all sails set.

'Atalanta'
had more
stability
than
'Eurydice.'

Such being the causes of the loss of the 'Eurydice,' the Admiralty cannot be blamed for selecting for the training service another vessel of the same class, but with much greater stability, and which had inspired her officers, after the experience of several commissions, with the utmost confidence. The 'Atalanta' compared favourably with the 'Eurydice' in all the elements which go to make a ship stable and seaworthy. She measured 131 feet between perpendiculars, 107 ft. 2 in. in length for tonnage, 40 ft. 3 in. in breadth, 10 ft. 10 in. depth in hold, and was of 923 tons, builders' measurement. The 'Eurydice,' on the other hand, was 141 ft. 3 in. between perpendiculars, 117 ft. 10 in. in length for tonnage, 38 ft. 4 in. in breadth, 8 ft. 9 in. in hold, and of 921 tons, builders' measurement.

Commenting on these figures the *Times* correspondent at Portsmouth remarked: 'It will thus be seen that, while the tonnage of the ships is substantially the same, the "Atalanta" is shorter, broader, and deeper than her sister ship, the difference being all in her favour.'

It has been said that the crew of trained seamen on board the 'Atalanta' was not sufficient to handle the ship in tempestuous weather. That statement will not be confirmed by comparing the crew of the 'Atalanta' with the number of able seamen who would be carried in a merchant ship of corresponding tonnage. This will appear very plainly on a comparison of the complements usually carried in large merchant ships with the crew of the 'Atalanta.' The following figures have been supplied by Mr. Heape, the managing owner of eight iron sailing ships of 1,500 tons register, five of which have been running for the last thirteen years, and the other three for the last five years, from England to Australia, and India. These ships have performed their voyages with the greatest punctuality, and without any disaster of moment to hull, spars, or sails. Each ship carries four officers, six apprentices, sixteen able-seamen, and six tradesmen, making a total of thirty-two men all told. The area of plain sail carried by the 'Atalanta' would probably not amount to two-thirds of the area of plain sail carried in either of the eight ships in question.

Proportion
of able
seamen.

Mr. W. J. Williamson, the well-known shipowner of Liverpool, gives the corresponding statistics of the dimensions and crew of the ship 'Lammermoor,' 1,710 tons register, belonging to Williamson, Milligan, & Co. :—

Length	.	.	.	.	.	.	.	280 feet
Beam	.	.	.	.	.	.	.	40 "
Depth	.	.	.	.	.	.	.	23 "
Area of canvas	.	.	.	.	.	.	.	4,075
								9
								36,075 square feet

Total crew 32 all told.

In considering the causes of our recent disasters, it is impossible to put aside altogether the fact that the 'Atalanta' and the 'Eurydice' belonged to a class which had been disused in the Navy for many years. It may, therefore, reasonably be presumed that the younger officers do not possess the art of handling them in tempestuous weather in the same perfection as the officers of a past generation, who were brought up in vessels of the same class. It was stated by Mr. Blackett, an old shipmate of Sir George Elliot and Sir Walter Tarleton, who had been four times round the Horn in a man-of-war, and four times in merchant vessels, that his nephew, who was the first lieutenant of the 'Atalanta,' had never been in a sailing ship. After leaving England he had reported to his father, Sir Edmund Blackett, that he had not taken his clothes off for

Mr.
Blackett.

fifteen days, and that most of the crew had lain down on deck suffering from sea sickness.

Dangers of
a sea life.

There may have been some extra risk, from the circumstance that the officers had not had experience in vessels of the same type, but a sea life is exposed to perils which no human skill or foresight can avert. Storms of a violence not surpassed in any part of the world are experienced on the route, which the 'Atalanta' would follow, on her passage from Bermuda to England. On October 17, 1780, a whole squadron, including the 'Thunderer,' 74, 'Stirling Castle,' 64, 'Defiance,' 64, 'Phoenix,' 44, 'La Blanche,' 32, 'Laurel,' 28, 'Shark,' 28, 'Andromeda,' 28, 'Deal Castle,' 24, 'Penelope,' 24, 'Scarborough,' 20, 'Barbadoes,' 14, 'Chameleon,' 14, 'Endeavour,' 14, and 'Victor,' 10 guns, were lost in the same storm in the West Indies.

Sir Allen
Young.

The extreme violence of the weather experienced by the 'Atalanta' is conclusively established in the letters addressed to the *Times* by Admiral Richards and Sir Allen Young, and by the investigations of the Hydrographer.

Speech of
compiler,
August
1881.

The loss of the 'Atalanta' was discussed in the House of Commons on August 14, 1881, on a motion by Mr. Jenkins. In replying, on behalf of the Admiralty, the compiler spoke as follows:—

Efficiency
of personnel
of the
Navy.

He had been asked to reply on behalf of the Admiralty to the observations which had been addressed to the House by the hon. member for Penryn (Mr. Jenkins), and he trusted that it would not be thought that the important statement which had been made was treated with disrespect, because the task of replying to it had been entrusted to a subordinate member of the administration. With reference to the speech which had fallen from his right hon. and gallant friend (Sir John Hay), he should leave the main points which he had raised to be dealt with by his hon. friend the Secretary to the Admiralty, in the observations which he was about to make on the shipbuilding policy of the Government. He would, however, say a word or two with reference to the *personnel* of the Navy. His right hon. and gallant friend had not expressed all the confidence which he had hoped every officer entertained in the naval service of the present day. He quoted Captain Shaw, the Superintendent of the London Fire Brigade, as his authority for saying that the seamen of the Navy had deteriorated. In answer to Captain Shaw he (Sir Thomas Brassey) would rely on the opinions of Admiral Hood. That gallant officer, speaking with the experience acquired in his command of the Channel Fleet, had, in a recent inter-

view with Lord Northbrook, commended in the highest terms the seamen of the Fleet. With reference to the Royal Naval Reserve, the right hon. and gallant gentleman opposite seemed to question its efficiency; but, from reliable information in the possession of the Admiralty, he (Sir Thomas Brassey) was in a position to state that the Royal Naval Reserve was never in a more efficient condition than at the present time. He believed there had never been so little difficulty in keeping up the number of the Force. So far from there being any difficulty in this respect, they had recently had applications for the enrolment of men of exceptional qualifications in excess of the number provided for in the votes. The Liverpool Committee of Shipowners and Masters, who for many years had been engaged in considering measures for the improvement of the merchant seamen, had recently dissolved. In their final report they had placed on record a gratifying conviction that a great improvement had taken place in the crews of our merchant ships. He would remind the House that the facilities for training seamen were now brought to a degree of development and efficiency which had never been reached in former years. At the principal ports training ships had been established, from which a large number of boys were supplied to the mercantile marine. They had heard on a recent occasion of the prosperous condition of the shipping enterprise of the country. Those who were anxious for the maintenance of seamanship in the merchant service must learn with satisfaction that the investment of money in sailing ships was at least as remunerative as in steam vessels.

In turning to the motion of the hon. member for Penryn (Mr. Jenkins), it was not necessary to trouble the House with any lengthy observations. It was not for him (Sir Thomas Brassey) to vindicate the conduct of the late Board of Admiralty in selecting the 'Atalanta' as a training ship. In all that they did they were acting under the most competent naval advice, and naval opinion was strongly in favour of sailing ships for making seamen. The officers of the Navy were not singular in their views. In the mercantile marine the experience in sailing ships was held in equal estimation. The principles of training in sailing ships having been accepted, it might be asked whether the 'Atalanta' was suitable for the service. On this point it was sufficient to observe that, in former commissions, embracing a vast extent of ocean navigation, she had been highly commended as a stable, lively, and buoyant vessel in heavy weather.

Passing on to that which concerned the present Admiralty, the duty which devolved on them was that of appointing a committee of inquiry. They had nothing to conceal. They were resolved that

Sailing
vessels re-
commended
for train-
ing.

Committee
of inquiry.

the inquiry should be searching and impartial, and they confidently maintained that the committee they appointed was fairly constituted, and that it combined with the naval element an able and independent representation of outside opinion. The inquiry was exhaustive. The report was signed by every member of the committee, and it pronounced the 'Atalanta' to have been sound, stable, well manned, and well commanded. With such a report before them the Admiralty were not called upon to punish or to censure any officers, whether executive or professional, who were responsible for the selection or equipment of the ship.

Cost of
repairs of
'Atalanta.'

The heavy expenditure on repairs had been sharply criticised, and it must be admitted that if such an outlay could have been anticipated it would have been preferable to have built a new ship. The first estimate for the repair of the 'Atalanta' was 11,000*l.*; the revised estimate was 16,000*l.* The actual cost of the first repair was 19,000*l.*, and subsequent alterations brought up the total amount to 28,000*l.* The increase on the original estimate was lamentable, but it was stated on behalf of the Controller's department that a new ship of the same type would have cost 36,000*l.* The liability to great and unforeseen expenses was doubtless an objection to fitting out any old wooden ship for renewed service at sea. In the case of the 'Atalanta' the expenditure was distributed over a lengthened period. It was divided between three dockyards, and no single individual was responsible for what had occurred.

Extreme
severity of
weather.

He would not hazard a conjecture as to the cause of the loss of the 'Atalanta.' It was certain that the vessel had encountered a hurricane of extraordinary severity; and seamen well knew how fearfully the ordinary phenomena of bad weather are intensified in those great tempests which are encountered only at intervals of years. He need not pursue further the painful subject of the loss of the 'Atalanta.' Before passing to other topics he would take the opportunity of expressing on behalf of the Admiralty and the nation their sincere and heartfelt sympathy with the widows and the orphans who had been left desolate by the disaster.

General
subject of
training.

He now turned to the general subject of the training of seamen. No member was more entitled than his hon. friend to address the House on the subject. He spoke with the experience of a successful shipowner and a former commander of merchant ships. The Navy would value the opinion of a seaman who had received his training in what he might call the sister service. His hon. friend had said that he shared the general opinion that the

art of handling a ship under canvas was a valuable, if not essential, part of a naval education. At the same time, he recognised the importance of steam in combination with canvas as an additional guarantee for safety. Such being the views of his hon. friend, he claimed his general approval for the ships in which the majority of our seamen are now serving. We had at present in commission one large frigate, the 'Inconstant,' and nineteen corvettes, some of which far exceeded in size and power the frigates of former days. We had thirteen sloops and one sailing sloop, the 'Cruiser,' which was doing excellent work in the Mediterranean. He was giving expression to his personal opinion when he said that he hoped that another vessel like the 'Cruiser' might hereafter be added to the Mediterranean squadron. We had also five brigs, which were most useful for training purposes, attached to the home ports. On the last occasion when the Board visited the dockyards they saw the squadron of brigs weigh anchor in Plymouth Sound, and execute in admirable style a series of intricate evolutions under sail. The present Board were determined to keep up the seamanship of the British Navy in a manner worthy of its ancient reputation. They had fitted out a flying squadron, and transferred large numbers of seamen from the barracks at Sheerness and the receiving ships at the home ports to seagoing ships. They would take care to supply the Navy with ships which would be efficient under steam and sail. They would spare no pains to improve not only the ships but the system of training. They knew that they were watched by competent critics, and he thanked his hon. friends the members for Banff and Penryn for their interesting and suggestive speeches.

The following communications, addressed to the editor of the *Times*, by Admiral Rous, in December 1875 and February 1876, will be read with interest in connection with the questions raised by the loss of the 'Eurydice' and the 'Atalanta':—

Admiral
Rous.

'When I was midshipman of His Majesty's ship "Bacchante," in December 1812, I took a trabaccolo of 80 tons, deeply laden with rice and planks, from off Ancona to Malta. Off the coast of Manfredonia I was caught in an easterly gale; heavy seas washed away part of the bulwarks, all the planks off her deck, my cask of water, and my only binnacle and compass. Our hatches were well battened down, the sea breaking over us. I got her before the wind with a storm forestaysail, and having only 40 miles to run on a lee shore, where we should have been knocked into toothpicks, I towed a heavy grapnel with 70 fathoms of hawser to deaden her way and prolong our lives. Getting near the high land the gale broke, and I groped

Letter,
Times,
December
1876.

my way to Malta in three days. I had four seamen, one of whom fell overboard and was drowned, and four prisoners of war. If I had been brought up by steam I should have been food for dogfishes in 1812. Three years ago I recommended the Admiralty to attach sailing tenders to every flagship, brig, or corvette, without steam power, that young men might be taught to be seamen, not sailors. They prefer an establishment at Greenwich where they may be taught gunnery and mathematics, but neither of these sciences will teach them to save their ships in a gale of wind on a lee shore, or will make them fit to command a sailing ship.'

February
1876.

Admiral Rous returned to the same subject in a letter addressed to the *Times* in the following year:—

'You did me the honour to publish three letters in 1871 on the state of Her Majesty's Navy. They foreshadowed the numerous catastrophes, which have since occurred, singularly remarkable for the ignorant indifference to avoid danger and an apathy and want of energy to attempt to save the ship. These accidents will occur again and again, owing to the want of seamanship, which cannot be in a worse state, and to the faulty education of the young officers.

'To illustrate this assertion, take a fine intelligent lad, well versed in navigation and mathematics, who has passed a brilliant examination. Appoint him to a ship of the "Gladiator" class, without masts. What can he learn afloat? He serves his time; passes for seamanship (Heaven only knows how!), probably because both parties have crude notions on the subject, and he is made lieutenant, knowing no more of the art of handling a ship than a lady's-maid who has crossed half-a-dozen times between Dover and Calais. He is appointed to a ship, and, as the officer of the watch on a squally night under canvas, 500 lives are at his mercy—for instance, the "Captain" was capsized; because the lieutenant did not know how to lower his topsails, or even to let go a lee topsail sheet.

'As a naval Power is not estimated by the size and number of its ships, but by the superior skill of its officers and by the pluck and courage of its seamen and marines, let us examine our resources. We have lost a great source of recruiting the Navy from the mercantile marine, owing to the abolition of the Navigation Laws introduced by Oliver Cromwell, to whom we are most indebted for our naval superiority. These laws compelled British merchant ships to be manned by British subjects, and to employ apprentices according to the amount of tonnage. If this law could be revived, it would in a few years add 40,000 men to our list of seamen.

'English merchantmen employ foreigners to the amount of three-

fifths, and I observe that in an English merchantman, when the captain and two mates were murdered, there was only one Englishman among the crew. We may congratulate ourselves that the seamen on board Her Majesty's ships are better educated, more amenable to firm and steady discipline, because they are not addicted to drunkenness. They are the men, above all others, to make first-class seamen, and when well commanded they will fight against all perils and dangers to the last gasp; and here I must remark that the training establishments for boys deserve national encouragement. Double the number of ships of instruction should be added; that is, working in the right groove. The conduct of the boys, when the "Blenheim" was in flames, proves that the breed is as plucky as ever.

'To regenerate the Navy, and to make young officers seamen, a flying squadron of small sailing ships should be constructed. They should be kept always on the move, visiting every port on both sides of the Atlantic. If they can work and manœuvre well under canvas they will have no difficulty under steam. In this squadron midshipmen should serve their first three years, and work with the mizen-top men so as to be taught the duties of a seaman.

'My old captain, Sir W. Hoste, told us, "Never order a man to perform a duty aloft which you can't do yourself." I know no better advice to midshipmen.'

Another high authority may be quoted in support of the same view. Sir Howard Douglas was a contemporary of Admiral Rous. Like him, he had had an opportunity of comparing the sailing navy with the steam navy. He knew the limited capability of the sailing ship, and the new power and resources which steam had given to the seamen; he knew with what excellent effect sail could be used as an auxiliary to the steam power; and he knew the enervating tendencies of habitual dependence on steam. In his volume on *Naval Warfare with Steam*, Sir Howard Douglas paid the following well-merited tribute to a fine feat of seamanship performed by the fleet under Sir Sidney Dacres:—

Sir
Howard
Douglas.

'No more striking illustration of the importance of good seamanship can be offered than that which recently appeared in the columns of the *Times*, where the passage of the Channel Fleet from Queens-town to Portland, during that fearful storm in which the "Royal Charter" was wrecked (October, 1859) is graphically described. This appears to have been one of the most violent tornadoes that has been experienced on our coasts; but, by sail and steam, through the nautical skill of the officers, nobly seconded by the devoted exertions

of the seamen, during showers of hail and sleet, the fleet, preserving the order of battle, happily arrived at the destined port. Professional skill alone carried the fleet safely through those 24 hours of peril.'

Admiralty
Committee,
1853.

Still, looking to the opinions of officers, who had gained their early experience in the Navy before the introduction of steam, the Committee appointed by the Admiralty in 1853 to inquire into the manning of the Navy recommended in their report, 'that a portion of the inexperienced first-class boys, who will, probably, in future be more numerous at the ports than at present, should, when convenient, form a part of the crews of the school brigs; and that, for this purpose, an additional brig be fitted out, to be attached to the Scotch station, which, in a further part of our report, we submit should be re-established.'

Admiralty
Company.

As a proof that experience in a sailing ship is the best preparation for the command of ships of the largest class, I may mention that it is a rule of the Cunard service that no officer can be promoted from the grade of second mate to that of chief mate, until he has been during two years the master of a sailing ship. With the same object in view, the Peninsular and Oriental Company employed one of their largest steamers, which had been converted into a sailing ship, to send out stores and coals to their depôts at Aden and Bombay, for the express purpose of giving an opportunity of training a number of young officers as seamen in the best and only complete school of training, namely, a sailing ship.

Admiralty
Committee.

The Pall
Mall
Gazette.

The importance of training seamen in sailing ships has been frequently insisted upon in eloquent but not exaggerated terms in the columns of the *Pall Mall Gazette*. The following passage occurred in an article on the lessons to be learned from the loss of the 'Vanguard':—'The frigate of old was the least mechanical thing that ever proceeded from the hands of man. She was almost a thing of life, and was studied, and humoured, and talked of, and thought of as an animated being. It was easier to idealise her than to idealise one's native land. The language of poetry was not strained when a man called his ship his bride, and we know how much it was his home. Human nature being the compound that it is, a creature which inspired that kind of interest must also have inspired a more jealous, prompt, and eager care than the edifice that has replaced her. The feelings she evoked and sustained can no more be transferred to the mechanical steam-pots of our day, than the helpful goodfellowship of man and horse can flourish on a bicycle. You cannot look upon a hawk, so beautifully made to swoop, and fight, and fly, without feeling the stir of its animation in your own spirit. The oyster,

beautifully constructed for defence, excites no sympathetic emotion whatever; and though our ships of war are not *all* like oysters, they are all too much like that animal for sentimental purposes, and too little like the winged and seemingly sentient ship of old. In short, the steam-pot (in the first place) gives far fewer opportunities for the development and exercise of the great sea qualities before mentioned; and not only so, but it is incapable of inspiring the attachment that would instantly call them out in its behalf in time of peril. But ships are not stocking factories, and however they are built, they must live and fight amidst constantly varying conditions of danger, and must rely at last upon the watchfulness, the alacrity, the instant resource, that seem to be disappearing from amongst the most intellectual and highly-trained body of naval officers in the world.'

Sailing ships are used, as it has been said, by all foreign navies for the training of seamen. In the French Navy, since 1875, two sailing ships have been employed for the training of top-men and quartermasters. It has long been the practice in the French Navy to send out the young aspirants on voyages of instruction in a vessel, or rather, in vessels, which have successively borne the time-honoured name of 'Jean Bart.' Two years since, it was proposed to discontinue this practice, but the suggestion was overruled, and the present Government has continued the old practice. The 'Jean Bart' starts every year from Brest, with its complement of young aspirants. The route ordinarily selected is by the Canary Islands to Teneriffe, thence to Dakar, in Senegal, Bahia, Rio Janeiro, and the Cape of Good Hope, returning to Lisbon; thus the future officers of the Navy make a voyage of six months' duration, and visit some of the most remarkable points of the globe. In the German Navy the boys, on their first enlistment, spend the summer months on board training brigs, which cruise in the Baltic.

French
Navy.

German
Navy.

No nation perhaps is so little wedded to worn-out traditions of the past as the people of the United States, and nowhere have they shown their readiness to accept innovations, which seem to be required by the peculiar exigencies of the hour, so freely as in the sphere of maritime enterprise. Towards the close of the great war they produced a new class of frigates, with which our own vessels, with the glorious exception of the duel between the 'Shannon' and the 'Chesapeake,' were unable to contend. They introduced the clipper ship into their mercantile marine. They constructed for the navigation of their estuaries and rivers side-wheel steamers of an original type, and exceeding both in speed and dimensions the largest constructions of the old world. For the fierce struggle, which

Sailing
ships for
training.
United
States
Navy.

was waged on their coasts and rivers with the Southern States, the Northerners produced a flotilla of double-enders and monitors; and both sides employed for harbour defence the stationary torpedo and the torpedo boat. All these inventions were more or less unknown, and certainly untried before. But the people of the United States did not hesitate to throw aside the old *matériel* of naval war, and to use the weapons that were best adapted to the service required. When the war was ended, and the naval forces were once more employed in the duties which belonged to a time of peace, the training of officers and men being by far the most important of those duties, what classes and types of ships were fitted out in the United States? Not the monitors, which had been found so effective during the war, but fully rigged unarmoured frigates and sloops, presenting a closer resemblance to the merchant clippers than the men-of-war of any other naval Power,—vessels capable of being handled readily without the aid of steam, and constituting for that reason the best school of training for inexperienced officers and men. The American officers are as strongly convinced as Admiral Rous himself, that the habit of relying on steam power tends to the deterioration of seamen. The Secretary to the United States Navy, in his report for 1869, expressed a strong opinion that an ironclad which was always under steam was a bad school of seamanship, and that promptitude and nerve, qualities so essential in naval battle, were not so constantly brought into play as they were on board a large sailing ship. In his annual report to the Secretary of the United States Navy in 1870, Admiral Porter declared that since 1846 the quality of their seamen had fallen off, as well as the quantity; and he reminded the Administration that it was in 1846 that steam was first introduced into the American Navy. Admiral Porter recommended vessels of from 1,400 to 1,600 tons as more desirable for foreign service in time of peace than unwieldy ironclads. In time of war the same vessels may be very destructive to an enemy's commerce.

Lieutenant
Collier,
U.S.A.

The same opinions are shared by the younger officers of the United States. In a paper on Naval Education, which appeared in October, 1879, in *The United Service*, an American monthly professional journal, Lieutenant Frederic Collier, of the United States Navy, says: 'Seamanship is now just what it always has been, and always must be. There is only one school in which it can be acquired, and that is *afloat under canvas*. The officer, skilful in handling his ship under sail, can make no failure with her under steam, while the "steam seaman," when his engines are disabled, will be helpless and hopeless. "Neither the differential calculus nor dynamical

study will enable an officer to manage his ship in a gale of wind, or in action. He must neither overlook nor undervalue plain duties while studying mathematics and philosophy.”

In the United States Navy, a new and complete system of training, framed after the English model, has been established. In his report for 1878-79, the Secretary of the United States Navy recommended that the sailing ships ‘Constitution,’ ‘Saratoga,’ and ‘Portsmouth’ should be retained for the purpose of training. ‘These vessels,’ he says, ‘are among the last of our sailing vessels, and are peculiarly adapted to the purpose of training the boys in the handling of sails, and bringing them to a knowledge of seamanship. I would recommend that during the winter the “Constitution” be stationed at New York, the “Portsmouth” at Philadelphia, and the “Saratoga” at Baltimore, or at such other ports as the Department may direct, and that, during the summer, these vessels should combine for a cruise, and exercise in our own waters, under the command of the senior officers.’

United
States
Navy.

VI.

Previous
to the
loss of
'Eurydice'
our train-
ing ships
successful.

*Broad
Arrow*,
September
1874, on
training
ships.

Having shown that the opinions of our own officers have been unanimous in favour of sailing ships, and that it has been the general practice of foreign navies to employ them for the training of seamen, it is further to be observed that, until the unhappy loss of the 'Eurydice' occurred, our training vessels had been eminently successful. In September, 1874, the *Broad Arrow* gave the following highly satisfactory report of the training, as carried out in the squadron of brigs under the personal supervision of Captain Wilson:—

'At the present time, the five vessels so employed consist of the "Seafflower," the "Martin," the "Sealark," the "Liberty," and the "Squirrel." These brigs average about 400 tons. They are sailing vessels without any steam aid, and depend, therefore, entirely on their sails for their motive power.

'According to the size of the brig so her complement of boys varies, but about one hundred are usually sent on board the larger vessels. A dozen able seamen are on board each vessel, whose duty is to instruct the boys in various details, and to aid in the navigation of the brigs.

'During about seven months each year, these brigs are at sea usually cruising about the Channel, and making trips from one part of Great Britain to another. Lately, all the brigs under the command of Captain Wilson, R.N., of the "Impregnable," have made a trip to the east coast of Scotland, and have had their mettle tried in the North Sea. The boys remain on board the vessels at sea about two months, during which time they gain a very fair practical knowledge of seamanship, but, considering the importance of the knowledge and training imparted to them, we believe four months instead of two would be a much more suitable period for their sea service. "About fifteen hundred boys are thus each year trained on board the brigs, and form, to a great extent, the future seamen of the Navy."'

Brigs in
Liverpool.

When the squadron, composed of four brigs, visited the port of Liverpool, the manner in which they were handled by their crews,

mainly composed of boys, elicited the warm admiration of the seafaring community. The brigs went out of the Mersey under sail, affording a spectacle rarely witnessed, now that tugs are almost invariably employed.

The example afforded by Captain Wilson, while in charge of the training service of the Navy, in taking the brigs under his personal command for an extended cruise on the coast of the United Kingdom, might be followed with great advantage by the captains, who may from time to time be appointed to superintend the training establishments of the Navy. I would venture to suggest for consideration that instructions to that effect should be issued by the Admiralty. Periodical inspections by the Port Admirals would also be of great advantage, in keeping all concerned thoroughly up to their work. Admiral Farquhar, when Commander-in-Chief at Devonport, on one occasion took the brig squadron, consisting of the 'Sealark,' 'Liberty,' 'Martin,' and 'Nautilus' under his orders, and hoisting his flag on the 'Sealark,' went into the Channel to see for himself how the boys went through their practical seamanship, and how the brigs were handled in a stiff breeze.

Captain Wilson in personal command of brig squadron. Captains in charge of training establishments should cruise with brigs.

The inspiring influence of emulation should be brought to bear as far as possible on the training service. For this purpose the brigs should be brought together and formed into a squadron under the personal command of the Captain Superintendent. The best cruising ground would probably be in Torbay. Sailing matches between the brigs should also be encouraged under proper regulations. In 1872, a most interesting sailing match took place in Torbay, between the 'Martin,' 'Racer,' 'Squirrel,' and 'Sealark.'

While the brigs have met with general approval for the training of seamen on our own coasts, we have been equally successful in the training vessel for ordinary seamen attached to the Mediterranean Fleet. A naval correspondent of the *Times*, in a letter dated Prinkipo, August 26, 1878, speaks of the 'Cruiser' in the highest terms:—'The little "Cruiser" has come and gone, having successfully passed the Dardanelles under sail, the only man-of-war probably that has done so since the Crimean war. She is the training ship for ordinary seamen, and is a most valuable adjunct to the fleet. Never more than a day or so in harbour, always at sea cruising about under sail, exercising the men aloft, her officers and permanent crew are, perhaps, the hardest worked people in the fleet. She is barque-rigged, and with her taunt and raking masts, neat rigging, and white sails, formed a graceful contrast to that ugly duckling, the "Devastation," near which she lay at anchor, while with the squadron at Prinkipo.

'Cruiser' in Mediterranean.

The "Cruiser" is deservedly a favourite with the Commander-in-Chief, for she does a great deal of valuable work, and is justly considered to have as smart a set of officers as any in the service.

'The "Cruiser" was originally a steam corvette; but, as men-of-war at the time she was built were intended to make as much use of their sails as their engines, her hull differs in no respect from that of a ship built for sailing alone. The screw-well being filled up and an increased grip given to the cutwater, all traces of her former character as a steam ship have been completely removed. The removal of the engines and boilers has given a great increase of accommodation, and she is altogether a very comfortable little craft.'

Sailing ships give the best training for seaman-ship.

It cannot be questioned that sailing ships of moderate dimensions, such as those employed by the United States Navy, give an excellent preparatory training for the many responsible duties to be performed in an ironclad. Sea habits, a knowledge of navigation and pilotage, vigilance on the watch at night, and other qualifications, can be much more thoroughly mastered in a handy ship, which is always under way, than in an ironclad, which is generally at anchor.

In the naval profession the utmost vigilance and fertility of resource will from time to time be required, even in the most powerful steam ship. The emergencies must, however, be rare in such a vessel when these high qualities will be required, and the normal condition of dependence on machinery, the management of which is not under the direct control of the deck officer, is probably the worst preparation for a situation of grave and sudden peril. In a sailing ship, where the force of the breeze is ever varying, ceaseless watchfulness is required in order to make good progress under sail; while the prompt preparations for every threatening squall will cultivate in the seaman all those moral qualities, which will enable him to grapple with storm and tempest, or to face the dangers of battle.

Jurien de la Gravière.

It has been well said by Admiral Jurien de la Gravière in *La Marine d'autrefois*:—'En vain l'art se transforme; quel que soit le moteur, l'énergie morale qui en fera l'emploi n'en gardera pas moins toute son importance. La Marine a son côté technique; elle a aussi, qu'on me passe cette expression, son côté humain. Le premier se modifie sans cesse, le second ne saurait vieillir.'

VII.

It was with a view of giving to the Navy the most complete and practical training, that Mr. Childers despatched a flying squadron under Admiral Hornby on a voyage round the world. It was an innovation on the long-established practice of the Navy of which many officers disapproved. The views of the older officers are represented in the following extract from a letter received from Sir Frederick Grey:—

Flying
squadrons.

‘Mr. Childers, on his accession to office, announced, as part of his policy, the reduction of the squadrons on foreign stations, and the employment of a flying squadron, giving as a reason that officers and men would thus have increased practice at sea. On this point I venture to differ from him. I have the best reason for knowing that even under the present popular commander of the flying squadron, the service is disliked by both officers and men, while the result of the last cruise was in every way bad. The health of the men was impaired, desertion occurred to an unprecedented extent, and, at the breaking out of the war on the Continent, the services of the ships were not available, and, if required, would have been lost for a long period.

Sir
Frederick
Grey.

‘But, even admitting that some experience was gained in fleet sailing, I cannot think that, as a school for young officers, it was half as good a one as that offered by ships on foreign stations. In them officers have to act much more frequently on their own responsibility, to take their ships in and out of harbour, and to show their skill in making passages, often through intricate channels and difficult navigation. Small vessels on foreign stations also supplied the means of employing and training for command many more young commanding officers than can now be employed. I hold it to be essential that our force in peace time should be on such a scale, and so employed, as to give to a sufficient number of officers and men that practice and that education in seamanship, which are necessary for securing to us skilled seamen in time of war, and this object is best attained by the

employment of small vessels on foreign stations, and of squadrons of large ships in the Channel and Mediterranean for evolutions.'

Admiral
Willes.

That the flying squadron was not a particularly agreeable service may be readily understood. The task of training young seamen is, as Admiral Willes remarked, a very disagreeable work for the commander and officers, but, as he truly said, what are they for in peace time but to train men so as to be ready in case of war? This view of the duty of the Navy and Army in time of peace is, we know, generally accepted in the military organisation of the great Continental Powers.

Admiral
Lalande.

The efficient system of training, now established in the French Navy, was initiated by Admiral Lalande, to whom must be attributed the merit of having been the first to restore the efficiency of the French Navy after the prostration of the great war. When in command he kept his crews so constantly at drill, that M. Xavier Raymond remarks that the English, who could not have got so much work out of their crews, made cutting observations on the eternal repetition of those monotonous drills. They used to ask when these scholars would have finished their education. One day Sir Charles Napier answered, 'Que ces écoliers étaient passés maîtres.' Admiral Lalande was one of those zealous, considerate, and popular officers, for whom subordinates are willing to perform acts of self-denial and devotion, which would be refused to a leader less capable of inspiring the same enthusiasm. To use the happy phrase of M. Xavier Raymond, 'Il savait rendre aimable l'austérité du devoir.' The same vigorous system of training is still continued in the French Navy.

*Broad
Arrow* on
training of
the fleet
under
Admiral
Hornby.

Examples are not wanting in our own service of the same zealous devotion to the irksome task of drilling and training the Navy. The hard work done in the Mediterranean fleet during the Eastern crisis is thus described in the *Broad Arrow*:—

'Admiral Hornby has always been known as one of the smartest officers in the service, and if amongst some of his men he has not always been the most popular, it is because he keeps them so hard at work. With untiring energy himself, he abominates idlers and skulkers, and accordingly we learn that in every branch of their professional duties the crews of the ships under his command are being constantly exercised. Drill—drill—drill—sail drill, cutlass drill, small arms drill, great gun drill, torpedo drill—everything that it befits a man-of-war's man to know and to be proficient in, Admiral Hornby requires his officers to be unremitting in their exertions to teach; and it is not too much to say that should his squadron be called into action, it will be equal, if not superior, in efficiency to any

fleet that has ever sailed under the British flag. It is well formed, well manned, well officered, and superbly commanded.'

English crews will probably be most effectually stimulated to exertion by the spirit of emulation. Training-ships should not be employed as single ships, but should be formed into squadrons. Admiral Porter, of the United States Navy, recommends to the American Naval Administration more sailing in squadrons. 'Nothing,' he says, 'improves a fleet so much as the ships acting together. By comparison they are brought to perfection, and each ship in the fleet can adopt whatever is good in another.' In his report for 1870, he said that the practice squadron on the American coast would serve the twofold purpose of a school for officers and men. With a practice squadron under an energetic command a fine class of seamen could be brought forward for the Navy. The importance of the officers becoming familiarised with their own coasts could not be over-estimated.

Training in
squadrons.

The general opinion in the French Navy is certainly strongly in favour of the system of cruising initiated in our own Navy by Mr. Childers. Admiral Jurien de la Gravière, in *La Marine d'Aujourd'hui*, makes the following observations on this question :—

Jurien
de la
Gravière.

'Si limités que puissent être les crédits qu'on nous accordera, je voudrais toujours en consacrer la majeure partie à l'instruction de nos officiers et à celle de nos équipages. On a imaginé bien des besoins maritimes factices, des stations destinées à protéger un commerce qui souvent n'existe pas, des surveillances diplomatiques qui ne résolvent pas la plupart du temps les complications qu'elles font naître. Ce qu'il y a de plus sérieux dans les armements de paix, c'est, à mon sens, ce qui peut préparer de bons armements pour la guerre. Les stations navales ne sont pas seulement inutiles, elles sont cruelles. Dans la vie d'un officier, au cœur de sa jeunesse, elles prennent parfois trois ou quatre années pour le vouer, sous un climat insalubre, à l'absence. On a proposé de remplacer la station par la circulation. C'est le vœu général de la marine, j'y adhère sans réserve.'

This passage is followed by some observations, which, although of a general character, will not be out of place in any section of this Memorandum.

If a cadet, on leaving the school ship, were entrusted to his care, this is the course of training through which Admiral de la Gravière recommends that he should pass. He should begin with two or three voyages round the world. This would make him a sailor, but he would still have something to learn. There should be a school of pilotage, as of artillery and seamanship. In cruising between Bayonne

and Dunkirk, the difficulties are sufficient to afford the means of acquiring a thorough knowledge of the art of pilotage. Having reached the rank of lieutenant, the young officer would be ready for the great school, in which every kind of knowledge is applied, and the squadron of evolutions is the source in which the martial spirit of officers and crews of the French Navy has always been stimulated and revived.

Objections
to extended
voyages.

It would probably be admitted that the liability to desertion in the Australian colonies, and the prolonged absence of a large body of men, who may be possibly required for service in the fleet, through some sudden and unforeseen political complication, constitute objections to the plan of sending away a large flying squadron on a voyage of circumnavigation. In a more limited voyage, to Madeira, Rio, and the Cape, and back to England, ample experiences for the purpose of training may be gained. At the ports visited, few temptations would be offered to desertion, and the extension of the submarine telegraph would bring the fleet into frequent communication with the Admiralty.

Flying
squadron.

A flying squadron affords by far the best practical training for the young officers and seamen of the Navy. Such a squadron should be fitted out every year, and the ships should be sufficiently numerous to take to sea all the seamen whose training is not completed, and for whom employment cannot be found in ships commissioned for the ordinary duties of the Navy. The 'Inconstant,' 'Shah,' and 'Raleigh' would form a noble flying squadron.

These ships carry large crews, are heavily rigged, and sail well. They are admirably adapted for ocean cruising, and for training seamen. They cannot be regarded as battle-ships, and they are too large for the protection of commerce. In a flying squadron they would find their appropriate place. A flying squadron should consist of ships of similar type, and they should be as nearly as may be equal in their sailing qualities. A frigate of the 'Inconstant' type is heavily handicapped when sailing in company with a corvette of the 'Gem' class. In the recent cruise under the Earl of Clanwilliam the 'Inconstant' went round the world under her topsails, while the corvettes with every stitch of canvas set could with difficulty keep their station. It is wearisome to the crews of fast ships to be held back by the dull sailers of the squadron.

With proper arrangements the training of our young seamen may be sufficiently provided for in the flying squadron. The proposal therefore to attach tenders to the barracks and receiving ships is supplementary and subordinate in importance.

The training-ships, which I should propose to attach to the home

ports, should be vessels of the 'Cruiser' class, from which the machinery might be removed when the boilers are condemned as unfit for further service. In case no such vessels should be at present available in the Navy, sailing ships of the best types could be purchased from the mercantile marine at from 15*l.* to 20*l.* a ton. It is true that such vessels would not be available for war service; but the same criticism may be equally applied to the brigs, which we are now building for the training service.

Tenders to be of the 'Cruiser' class.

It may be thought that the experience gained in a small sailing ship would be an imperfect preparation for the command of an iron-clad; but it will be admitted by naval officers that the sea habits acquired in the vessels proposed would be a pure gain, as compared with the long detention in a harbour ship. The younger officers of the Navy would derive as much benefit as the seamen under their command from the additional opportunities of cruising thus afforded. The views of Sir Beauchamp Seymour on this subject are explained in the following letter, dated Her Majesty's ship 'Minotaur,' Vigo, December 12, 1875:—

Advantage to officers.

Sir Beauchamp Seymour.

'I have just read your letter in the *Times* of the 4th. I so entirely agree in much which you say that I cannot resist the temptation of writing to you. Especially do I go with you as to the last paragraph of your letter. Seamanship can only be kept up by constant practice, and it cannot be kept up at all if only acquired theoretically. It would, therefore, be everything, if we had the means of sending the sub-lieutenants and ordinary seamen, who are now deteriorating in every way in the home ports, to sea to learn their profession; and the Admiralty have taken the initiative in this respect by sending out five brigs manned by ordinary seamen, which will come under my orders next week; but these brigs have to return to England in February or March, in order to revert to their ordinary duties of training boys. We have got rid of all the sailing craft which formerly filled our seaports. If, therefore, we are to carry out the system you and I advocate, we must go into the market and buy vessels, as we have none of our own available. I would have them of about seven hundred or eight hundred tons (old register), ship rigged, and to carry only eight or ten six-pounders on deck. Five or six of these vessels would do our work; and if the sub-lieutenants, instead of being crowded at Greenwich, were to be available for service in these and other sea-going vessels, it would be much better for them and for the Navy in general. Not that I would do away with the Greenwich course, far from it, but instead of going through it as sub-lieutenants, every officer on being promoted

to lieutenant should in peace time be compelled to go to the college for a year.'

Numbers
in harbour
ships.

The figures, quoted by Commodore Wilson, may be compared with the returns for June 1, 1880. At that date we had in harbour ships and first reserve ships—

—	Harbour and First Reserve Ships	Sea-going Ships and Foreign Service	Total
Petty officers	1,774	2,390	4,164
Leading and able seamen . . .	5,190	5,032	10,222
Ordinary seamen	1,496	4,118	5,614
Total	8,460	11,540	20,000

In July 1875, the date of the paper read by Commodore Wilson, we had, 'in sea-going vessels 10,500, in harbour ships 8,000 blue-jackets of man's rate, and we learn from the same source that the average age of entry of the boys is sixteen years, that they are two years from the date of entry until they are rated as men, and that they have only two months' sea service in the fleet as boys. Though the sea-going ships carried as many boys as they could stow, there were still from 1,500 to 1,700 constantly on depôt, and a considerable number of boys reached their eighteenth year, while still waiting in harbour ships, and thus became entitled to a man's rating, without having been to sea.'

Number of
boys on
depôt.

'At the present time the number of boys in training is 2,200. The number on depôt, awaiting their turn to be drafted to sea-going ships during the two years ending July 1, 1880, was 1,390, and the number on the latest date to which returns have been received was 1,082.'

If 1,000 more boys were drafted to sea-going ships, it would be necessary to send to sea at least 2,000 more seamen. It has already been shown that we have in our harbour and first reserve ships 8,460 men of the seamen class, of whom 1,496 are ordinaries. A larger proportion of the seamen class should be employed in sea-going ships. The difficulty lies, not in providing the *personnel*, but in furnishing the *matériel* for the sea-going training of the Navy. Brigs and sloops will not answer the purpose. On the other hand, it is essential that a training-ship be capable of being handled efficiently under sail. In 1877, Sir Thomas Symonds and Sir Hastings Yelverton recommended for this service a screw-frigate with satisfactory sailing qualities.

If we search the *Navy List* for vessels adapted for training sea-

men, we still find the eight frigates of the 'Ariadne,' 'Bristol,' and 'Endymion' types, commended by Captain Noel as being, without exception, magnificent cruisers, perfect in symmetry of form, swift as possible under sail, and carrying an efficient armament; their only fault being that they lack both steam power and space for fuel. The 'Aurora,' 'Duncan,' and 'Newcastle' were very recently in the first division of the Steam Reserve, and the 'Ariadne,' 'Anson,' 'Donegal,' 'Diadem,' 'Doris,' 'Narcissus,' 'Melpomene,' 'Scylla,' 'Immortalité,' and 'Undaunted,' could be repaired and fitted for light armaments. All the ships mentioned would make excellent training-vessels; but the majority must be practically reconstructed to fit them for further service. It may be argued that as we may have many wooden ships at our disposal, of a suitable type, though in a bad state of repair, it is better to repair them, so long as the repairs cost less than a new ship. If our view were limited to the estimates of the current year, this suggestion might be accepted; but when we look forward to the expenditure on maintenance over a series of years, it will be apparent that, in bringing forward old wooden ships for training, we shall be adopting a course which must in the end prove far more expensive. The wiser course, therefore, would seem to be to design special vessels for training; and we have to consider the type and dimensions which should be adopted.

Vessels on list adapted for training, 1879.

Argument for special ships for the training service.

If the country were content to entrust the seamen of the Navy to sailing ships of a greatly improved type, as compared with the two vessels which have lately been lost, the training-ships could be built at a considerably reduced cost. The finest sailing ships in the merchant service (and nobler vessels could not be designed) may be obtained for 14*l.* per ton register. It is probable, however, that auxiliary steam-power will be regarded as essential for ships employed on an extended ocean voyage. Vessels of the 'Cruiser' class would be admirably adapted to serve as sea-going tenders to the flag-ships at Portsmouth, Plymouth, and Sheerness, their cruises not extending beyond the chops of the Channel, or perhaps the coast of Portugal. For more extended cruising we possess a considerable number of suitable vessels. A marked improvement may be observed in the more recent sloops.

Sailing ships for training.

Proposal to build four training-ships.

VIII.

Seamen
may be
transferred
to Reserve.

Sir Charles
Adam.

There remains the alternative of transferring the seamen whom we cannot train in the Navy to the Naval Reserve. A memorandum on the training of seamen in Greenwich School was submitted to the Admiralty in 1852, by Admiral Sir Charles Adam. It contains a strong opinion as to the value of the mercantile marine as a nursery for seamen :—‘ It surely must always be of the utmost importance to encourage the instruction of seamen in the long voyages by merchant ships, especially as the coasting trade is now very much carried on in steam vessels, and diminished by railway carriage of goods. If there are seamen in the country, some will always be found to enter the naval service ; and in the case of extreme emergency, large numbers may be called upon to do so. It must be admitted in peace there is little opportunity of making good seamen in the Royal Navy, as the ships are so much in harbour.’

Admiral
Denman.

The late Admiral Denman, in his well-known pamphlet on *Admiralty Administration*, recommended that the Navy should undertake the training of seamen in numbers beyond the strict requirements of the service in time of peace :—

‘ The most recent effort,’ he said, ‘ of the Admiralty, to provide the country with seamen to man the Navy, took its origin from the Royal Commission of 1858, which wound up its inquiry with an elaborate report in 1859. . . .

‘ By far the most important part of the report was this suggestion, that boys should be trained on a large scale by the country, with a view of providing seamen qualified alike for merchant ships or ships of war. . . .

‘ By such means alone can the class of thoroughbred seamen be maintained, since no man can be made a thorough seaman who has not been brought up to the calling from boyhood, and, owing to the repeal of the Navigation Laws, few boys are now carried by merchant ships, while the Navy breeds up only a sufficient number to fill its own vacancies as they occur. . . .

‘ It is most earnestly to be hoped that there may be a large in-

crease in the number of training cruisers, commanded by the ablest officers, for no duty can possibly exceed the importance of training boys by thousands, who may in a short time be made good seamen, and those not required for the Navy would be readily taken by shipowners. Supposing such a system to be organised with talent, and carried out with consistency, the most important results would follow in aid of measures for manning the Navy, for these lads would carry with them the most favourable evidence of the treatment in ships of war and would themselves entertain feelings of attachment, which would operate with great force upon all occasions when men were required for the service.'

Boys trained in Navy might be transferred to Naval Reserve.

Objections may be urged to a proposal by which the shipowners would be relieved of the expense of rearing their own apprentices. On the other hand, it must be admitted that the reserve of seamen which we possess in the mercantile marine is a distinct and permanent element of our naval resources for war. We have recognised its importance by the creation of a paid Naval Reserve, as the appropriate substitute in a free country for the French *inscription maritime*. By transferring to the Naval Reserve the seamen primarily trained in the Navy, the country would be relieved of the cost of maintaining them in peace in numbers beyond the ordinary requirements of the service, while at the same time we should secure their service for the Navy in time of war.

Officers of the British Navy might be encouraged, as they are in the Norwegian and French Navies, to seek employment, to some extent, in the mercantile marine.

Officers might be employed in mercantile marine.

IX.

As to the
number of
seamen re-
quired.

Some officers have raised a question as to whether we require so large a number of seamen as we have at present. Captain Noel is of opinion that 12,000 able seamen and petty officers would be sufficient, and that it is impossible to train more. The number at the present time is 14,386. It is urged that no revision of the *personnel* of the Navy has taken place since the 'Devastation,' carrying a crew of 300 men, of whom less than a third are seamen, has taken the place in the line of battle of the 'Marlborough,' carrying a complement of 1,300 men, of whom more than two-thirds were seamen; and that our force should be reduced rather than be allowed to remain so long in harbour as to lose its seaman-like character.

X.

The surveying service may be mentioned as an additional means of employing and training officers. In 1854, when we were engaged in war with Russia, 19 captains, 10 commanders, 16 lieutenants, and eight ships were employed on surveys in different portions of the globe. In 1873 only one ship was so employed. In 1879 we had two captains, one commander, and 24 lieutenants, besides 20 navigating officers employed in six surveying vessels, and on surveying duty in other ships. Naval officers, if afforded opportunities of practising afloat what they learned at Greenwich, would be enabled more efficiently to protect the trade they would be helping to extend.

Surveying
service.

The abolition of a separate class of officers for navigating duties makes it important to provide increased facilities for executive officers to acquire a practical knowledge of the pilotage of the Channel and the coasts of the United Kingdom. A few schooners might be attached to the flag-ships at the home ports, or the Naval College at Greenwich, to which officers could be appointed for the purpose of cruising for three months on the English coast, after passing their examination at Greenwich. The school of pilotage would be of value in affording employment at sea for a certain number of officers who might otherwise be detained in harbour ships, or on half-pay.

XI.

Training in
gunnery.
Scott.

In connection with the general question of the training of seamen it may not be superfluous to refer to the observations of Admiral Scott, one of our most distinguished gunnery officers, with reference to the necessity for additional training in gunnery in the Navy, or in taking aim, as distinguished from the routine gun drill. Speaking in 1875 at the United Service Institution on Captain Wilson's paper, he said: 'We require more skill among our seamen gunners. The low standard of skill is not creditable. We have only four large guns in some of our biggest ironclads, and hence the men firing them ought to be highly educated marksmen.'

Howard
Douglas.

Similar recommendations have been repeatedly urged upon the Admiralty. Sir Howard Douglas, in his treatise on *Naval Gunnery*, pointed out that it would be advantageous to have one or two cruising ships for gunnery exercise on the ocean. This important measure was adopted by the Board of Admiralty, but very imperfectly, by appointing a gunboat as a tender to each of the two gunnery ships for the purpose intended. But these are not cruising ships, and very insufficient for the purpose.

French
Navy.

'Frigates of instruction for seamen gunners in the French Navy are appropriated to that important purpose, and occasionally accompany their squadrons and fleets on sea-going service. Thus the "Amazone, frégate d'instruction," formed part of Admiral Lalande's fleet in the Mediterranean, in 1840. The "Minerve," first-class frigate, was specially commissioned for "L'Ecole des Matelots Canoniers," in 1848.'

In another passage of the same treatise, Sir Howard Douglas points out the increased difficulty of accurate practice in a steam fleet as compared with a sailing fleet.

'The direction and force of the wind, and thereby the setting and amount of the swell, though immaterial to the progress of steamships, are important disturbances to the practice of gunnery. With the swell abeam, or a cross swell, the rolling motion of a heavily-masted steam ship with the sails furled, will be far greater and more

rapid than it would be when those motions are checked by sails. The gunnery of a steam fleet will not, therefore, excepting in a smooth sea, be so efficient as that of a fleet of sailing ships; and it will require all the skill and tact of well-trained seamen gunners to watch the roll and catch the proper moment of pulling the trigger line.'

The same opinions are expressed by the younger officers of the Navy. Commander McHardy, in his essay on *The Heavy Gun, the Ram, and the Torpedo*, written in competition for the prize offered by the Junior Naval Professional Association, made the following criticisms and suggestions with reference to this subject:—'The Navy does not possess sufficient skill in firing at objects in rapid motion to ensure either accuracy or rapidity. There are no men specially taught by intelligent eye-training to attain these results. Our naval gun sights are ill adapted for adjusting rapidly to suit the ever-changing distances. There are no officers or others specially trained and distinguished for their skill in directing the fire of the guns simultaneously on fixed bearings.' Why not at once recognise the qualification of marksman as the one essential test for the rating of seaman gunner, as it also is the one and only purpose of a gun to hit the mark? Is ability as a marksman sufficiently considered in awarding the various rates of gunnery pay under existing regulations?

Com-
mander
McHardy.

The success of the Americans in the frigate actions of the war of 1812 was won partly by the superior power of the vessels, but also by the decided superiority in artillery practice. In the reverse cases, when the 'Chesapeake' was vanquished in fifteen minutes by the 'Shannon,' it was the training of weeks and months which secured for Captain Brooke a decisive victory over the untrained crew of his antagonist.

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SECTION III.

*ENGLISH AND FOREIGN OPINIONS ON
THE INSTRUCTION OF THE NAVY
IN STEAM TACTICS.*

ENGLISH AND FOREIGN OPINIONS ON THE INSTRUCTION OF THE NAVY IN STEAM TACTICS.

Instruction
in tactics.

HAVING examined the system of training for the seamen, a few observations with reference to the officers seem necessary to complete the subject. A large number are always in the home ports. Others are attached to ironclads and flagships, which are frequently detained in harbour for extended periods, and rarely cruise enough to give to the younger officers, who are learning their profession, sufficient opportunities of adding to their practical experience.

In the United States Navy, where a system of training has been established similar to that in our own service, a considerable doubt is entertained by the older officers as to the value of a course of instruction on shore in combination with cruises at sea for a limited period in the summer months. Ironclads, and especially mastless ironclads, are well adapted for the instruction of the Navy in gunnery and steam evolutions; but there are other duties of the naval profession which can only be learned by constant cruising, and that in vessels which can be handled under sail. The theoretical training of our officers is thoroughly well considered, but theory without practice will not make a seaman even in the case of men who have an intuitive faculty for seamanship.

In the present memorandum it is not proposed to deal with the general subject, the object being to direct attention to the desire expressed in the Navy for further opportunities of practice in steam evolutions.

Jurien de
la Gravière.

Admiral Jurien de la Gravière has described in graphic language the sort of training which is necessary in order to prepare officers for the rapid and desperate manœuvres of a battle with the ram;—

‘Quand deux flottes se rencontreront, quand les lignes après avoir fondu l’une sur l’autre se seront pénétrées, la lutte ne pourra se continuer que par un brusque renversement de la route primitivement suivie. Cette manœuvre, presque inévitable, est de nature à causer entre les bâtiments d’une même armée plus d’un choc involontaire ;

il faut s'habituer à marcher de nuit aussi bien que de jour en ordre serré, savoir se grouper, savoir se répandre, présenter tantôt une masse compacte, tantôt des échelons successifs ; il faut surtout posséder la science indispensable, celle qui consiste à comprendre le chef à demi-mot, à surveiller les déviations de sa route, à s'inspirer de son exemple et à se passer de ses signaux. Toute la composition homogène de la flotte, la symétrie des courbes de giration, atténueront ces risques ; l'habitude des mouvements d'ensemble les fera disparaître. Ce n'est pas dans la pratique des évolutions régulières, des passes géométriques, qu'il importe le plus de faire preuve d'un coup d'œil exercé ; l'habitude est bien autrement nécessaire, quand on veut acquérir l'aplomb qu'exigeront la plupart des mouvements de combat. Ni les navigations isolées, ni les simulacres d'escadres composés d'avisos ou de canonnières, ne constituent pour cet art difficile une école suffisante. Il faut apprendre à faire mouvoir dans un espace restreint des masses de 6,000 ou 7,000 tonneaux, qui ne peuvent venir en contact sans se broyer mutuellement.'

The brilliant and dashing inspirations of the moment will probably decide the naval battles of the future, and the best preparation will be found in the constant practice of steam evolutions. Admiral Le Comte de Gueydon, in his treatise on *La Tactique Navale*, says :—

Comte de
Gueydon.

‘ On ne saurait formuler de tactique absolue, et aucun système n'inspire les résolutions suprêmes qui font gagner les batailles. Mais si la tactique ne supplée pas au génie du chef et à ses illuminations soudaines, elle n'en est pas moins le docile et indispensable instrument qu'il a dès longtemps façonné à son usage et dont il doit être sûr. C'est elle qui lui donne le moyen pratique de disposer, suivant les exigences du moment, des forces qu'il a dans sa main ; c'est elle surtout qui lui rend ses forces souples, maniables et en état de se prêter à l'intelligente exécution de ses volontés. Sa pensée, dès lors, dégagée de la dangereuse préoccupation de ne se voir qu'imparfaitement comprise ou obéie, peut planer en toute liberté sur la lutte et, ce qui est l'objectif principal, se concentrer sur les mouvements et les manœuvres de l'ennemi pour déjouer ses projets ou le frapper à l'improviste à la première occasion qui s'en présente. . . . La tactique systématique doit être d'ailleurs modeste, et son unique mission d'incontestable et réelle utilité est remplie quand elle a libellé tout ce que la méthode peut produire pour alléger la tâche des capitaines dans la tenue de leurs postes et les grouper, à un moment donné et dans une disposition voulue, autour de leur chef.

Elle ne peut s'affirmer d'avance au delà de cette limite, et c'est des événements seuls qu'elle reçoit plus tard sa consécration. . . .'

Admiral
Touchard.

The Comte de Gueydon's recommendations are supported by the advice of many officers of the French Navy of great experience and distinction. Among the most eminent of these I may refer to Admiral Touchard. In an article contributed to the *Revue Maritime* of February 1877 he wrote as follows :—

‘Quelles sont avant tout les conditions d'un bon emploi pour les armes nouvelles comme l'éperon et la torpille ? C'est, avec un cœur ferme, un coup d'œil sûr, et une main sûre. Or la science ne sera jamais qu'inhabile à développer ces facultés naturelles, tandis que la pratique, si elle ne les donne pas, saura toujours les développer et les affermir.’

Admiral
Bourgeois.

Admiral Bourgeois, the author of some admirable lectures on naval tactics and evolutions, in urging the necessity for constant practice, makes the following observations :—

‘Les circonstances variées du combat d'escadre donnent aux capitaines des occasions encore plus nombreuses de tirer parti de leur coup d'œil et de leur habileté de manœuvre, lorsque, par exemple, il s'agit de donner le coup d'éperon par un brusque mouvement de flanc, à un navire ennemi obligé de présenter la pointe à un autre adversaire qui le menace. Dès que l'action est engagée, les incidents causés par le feu de l'artillerie et le choc des navires ne tardent pas à détruire la régularité de la première passe. Les bâtiments désarmés laissent leurs adversaires libres de se porter sur d'autres points et d'accabler d'autres ennemis. Il faut apprécier promptement ce qu'on doit craindre d'un second adversaire qui surgit, ce qu'on peut espérer en attaquant brusquement un navire avec lequel on n'était pas d'abord engagé et qui vient lui-même s'offrir au coup d'éperon. Aucun signal, aucun ordre, aucune règle ne peut, dans ces circonstances, suppléer chez un capitaine le coup d'œil, la résolution et le sang-froid. C'est donc à faire acquérir ces précieuses qualités à ses capitaines qu'une puissance maritime doit tendre dans l'emploi de ses escadres d'évolutions pendant la paix, si elle veut se ménager des chances de succès pendant la guerre.

‘Les évolutions habituelles de la tactique et les circonstances ordinaires de la navigation, même en escadre, sont notoirement insuffisantes pour atteindre ce but. C'est à créer sur mer l'image du combat, comme on l'a fait sur terre par les manœuvres des corps d'armée, qu'il faut s'attacher aujourd'hui pour être certain qu'au jour de l'épreuve aucun capitaine ne sera surpris par la nouveauté de sa tâche et des obligations qui lui seront imposées.’

The following observations are taken from the *Projet de Tactique Navale*, by Lieutenant de Penfentenyo :—

Lieutenant
de Penfen-
tenyo.

‘ Le combat naval contemporain aura ce caractère spécial, que les mouvements qui l’auront précédé joueront le rôle le plus important et auront, dans tous les cas, une influence catégorique sur le succès ou l’échec final. Donc, des plans stratégiques bien conçus, et leur développement complet avant d’entamer l’action, sont un des buts que doivent chercher à atteindre tous les officiers de marine, et auxquels ils ne sauraient consacrer trop de travaux et d’efforts.

‘ Ces deux questions posées, nous pouvons mesurer l’importance des évolutions et limiter leur cercle d’action. Par leur nature même, elles ne sont qu’un moyen entre les mains de l’amiral pour placer d’abord sa flotte dans une position avantageuse, puis attaquer avec les plus de chances de succès possible. Pendant l’engagement, elles cessent d’être utiles, et cèdent la place à la bravoure, à l’audace, à l’initiative individuelle. C’est là leur rôle naturel et nul n’a le droit de leur demander davantage.

‘ Mais, néanmoins, il ne faut pas croire, parce que les évolutions navales ont un cercle d’action limité au point de vue du combat, que leur importance en soit amoindrie. Au contraire, leur importance grandit, car dans l’intervalle de temps où leur rôle est prépondérant, se concentre, comme les rayons au foyer d’une lentille, tout l’intérêt de l’action qui va s’engager, et se prépare le gain ou la perte d’une bataille. Si les évolutions sont mal conçues ou mal comprises, l’amiral n’a plus le moyen, en manœuvrant avec agilité, de tromper l’ennemi sur ses intentions et de profiter de ses fautes pour s’assurer la victoire. Il ne peut choisir le moment d’engager le combat et doit attendre passivement l’ennemi, comme l’amiral Persano en fit l’épreuve amère à Lissa. L’intervalle pendant lequel les évolutions ont de l’importance est court, mais, pendant ce temps, nous pouvons, avec leur aide, tenir l’ennemi en échec, et nous élancer sur lui au moment qui lui sera le moins avantageux. Voilà le but des évolutions navales, et voilà pourquoi elles ont une immense importance.

‘ Dès le début de l’action un amiral ne pourra presque plus intervenir. Son rôle sera de donner à tous l’exemple du courage et de l’intrépidité ; il sera sûr du succès, si, profitant des loisirs de la paix pour instruire ses capitaines il les a fréquemment exercés aux manœuvres les plus propres à former leur coup d’œil et leur habileté personnelle, et s’il a su au dernier moment leur communiquer le feu qui doit l’animer lui-même.’

These extracts from French writers may be concluded with a

naval war-
re with
steam.

Sir
Howard
Douglas.

quotation inserted by Sir Howard Douglas in his *Naval Warfare with Steam*. It contains an indisputable proposition.

It may be said of well-commanded fleets, *mutato nomine*, as was said by an eminent tactician respecting manœuvring armies directed by generals of talent, that—‘Entre deux armées pareilles, ce sera enfin à qui l'emportera de génie et de *célérité* dans les manœuvres.’ (Guibert, vol. ii. p. 187.)

Admiral
Randolph.

Turning to English authorities, we have the same views not less forcibly stated by Admiral Randolph, in his paper on *End-on Fire from Ships of War, tactically considered* :—

‘There is no position that history assists me to conceive, in which so much comparatively will depend upon the personal qualification of one officer, as that of a captain in such combats as these we have been discussing and must look forward to ; and does it not forcibly show the supreme importance of each officer, who aspires to such a position, studying thoroughly the subject and being prepared to act instantly and unhesitatingly, by having at his fingers’ ends the moves of sound tactics and their consequences, with reference to those which are, under the circumstances, possible to the enemy ?

‘Theory may point out and even decide what these moves should be, but practice alone can make experts in their execution. As our officers were formerly thus perfected in seamanship, so may our young ones in future in increasing numbers, and by unremitting pains and constant practice in innumerable small vessels, be rendered equally masters in handling their ships, not only singly, but in squadrons ; and by a due appreciation of the vast responsibilities which may devolve upon them, nothing less than the guardianship of the very destinies of our country, be urged to strain every nerve to qualify themselves for so important, so noble a position.’

In his remarks on Captain Colomb’s paper on the *Naval War Game* the same gallant officer said :—

‘I believe all your material put together without good naval tactics will be absolutely worthless. Notwithstanding this, I am sorry to say I feel that although it is so important a subject, it is precisely the one that is least attended to and practised of any, and certainly not through any want of zeal or fault of the officers themselves. I hold that at the present day naval officers, as a body, hunger and thirst after knowledge and practice, to a degree utterly unequalled at any former period ; I impute no blame or fault to anybody.

‘I am persuaded that if you sent the “Alexandra” and “Téméraire” to fight it out at sea, the victory would be not to the

strongest in material power, but to the one best handled. I must say, therefore, I wish to draw the attention of the meeting and the profession generally to the extreme importance of this point of practical skill in tactics. I think under many circumstances ships being fairly well handled might suffice, but in the circumstance of meeting at sea, you should not be content with equality with other nations, but we should go in for superiority. I do not think we are taking steps to attain that superiority. If I am correctly informed foreign nations are paying much more attention to this subject than we are, and I think a great lesson can be drawn from those simple manœuvres practised in Russia some time ago, for which this Institution is greatly indebted to our gallant chairman.

‘Far be it from me to insinuate that our ships are not as efficiently commanded as we could desire. As far as I know they are most ably and admirably commanded—speaking from my own experience, excellently commanded. But I cannot but fear that there are a large number of officers on the list who have not had that practice and experience at sea, and who would be found to be deficient and failing in proficiency if they were called upon to serve. I therefore feel the greatest possible anxiety that further steps should be taken towards the establishment of a systematic method of training our younger officers in the practical work of handling their ships at sea. I do not think it is necessary to expend any great amount of money. The gunboat trials in the Russian squadron are full of information; a vast deal of information is got out of a very little experience in that way, and it could easily be carried a little further than steam launches and gunboats by larger vessels who need not ram each other, but spars or rafts towed astern.’

In course of the discussion at the United Service Institution on April 3, 1871, on Captain Colomb’s paper on *The Attack and Defence of Fleets*, Captain Goodenough said:—

‘Directly one vessel turns the least away from the other, she at once places herself in a position of disadvantage, unless she has something to make up for it, either speed or turning power, or better stomach or eye in the body of the man who commands her. That is a point, that of meeting straight end on, which I think requires to be very well looked into, and about which everybody who has to command a ship should thoroughly make up his mind; because that seems to me a position in which ships will again and again find themselves, pointing directly to their adversaries, and the first commander who flinches, no matter from what cause, either from want of stomach or from want of eye, will put himself at a disadvantage.’

Captain
Good-
enough,
R.N.

Captain
Cyprian
Bridge,
R.N.

The following remarks are from a paper on *Fleet Evolutions and Naval Tactics* read by Commander Cyprian A. G. Bridge before the Royal United Service Institution, February 17, 1873:—

‘Both will approach one another at a greater or less speed; that of about eight knots, I am inclined to believe, will be the most usual. As they approach every gun will most likely be fired. As they arrive in closer proximity this bow-fire will become at length ineffectual, and the respective captains will be disinclined to keep the fore-parts of their ships enveloped in clouds of smoke, so it will cease. Now will come the doubly anxious moment of seeking to ram one’s antagonist; to avoid being rammed by her; to steer clear of the towed torpedo; and to plant one’s own torpedo conveniently under her water-line. In the early stage of an action, I venture to think no great damage will be done on either side. The two I expect will pass through one another to a great extent intact, till there shall arrive the time which shall be the crucial test of the value of the evolutionary practice of peaceful times. The two fleets will have to reform. Picture to yourself the effect, moral as well as material, of a well-ordered column of fresh ships bearing down at superior speed upon a group of vessels endeavouring to reform. This strictly tactical movement (that of bringing overwhelming force upon some portion of the enemy’s fleet) should not be left to chance or signal.’

Admiral
Inglefield.

In the discussions on a paper on *Naval Tactics*, read by Admiral Inglefield at the Royal United Service Institution on June 29, 1868, repeated exercises in steam evolutions were most strongly urged by many speakers. Admiral Inglefield referred in his paper to the pains taken by Lord Clarence Paget and Admiral Warden to instruct the officers under their command in the manœuvring of ironclads under steam. ‘Lord Clarence Paget was in the habit of assembling the captains of his squadron on board his flagship before evolutions, and after they returned to port, and sometimes when the weather was suitable at sea, to receive suggestions from them, and remarks upon the exercises they had been performing. I think that considerable benefit to the service accrued from this interchange of experiences.’

Lord
Clarence
Paget.

Admiral
Warden.

In the Channel Fleet, Admiral Warden adopted a plan of exercising with the steam launches, a very useful and economical way of instructing the junior officers in naval tactics.

Should the opportunity ever occur for assembling a flotilla of gunboats in the Channel for similar exercise, I believe much instruction might thereby be gained, and if officers on half-pay might be allowed to take that opportunity of keeping pace with the times

there would be numbers who would doubtless gladly avail themselves of the occasion.

In the discussion which followed, Sir Houston Stewart said:—
 ‘Many of us remember the time when our Navy had no universal system of gunnery, when every ship in the fleet had her own system of gunnery, and it was a question whether we should have a universal system of gunnery. That is all over now: every ship in the service has the same system of gunnery. And why should we not have a universal system of steam tactics? We have our experimental squadrons, why cannot there be a day in the week when our officers can be assembled in the cabin with the captain, and put through all the tactics, so that every officer in the ship may learn every signal and every manœuvre? The thing is as simple as possible, if we had a well-devised system of tactics. It is a most important and vital point, that every officer in the Navy should be thoroughly instructed in the theory of steam tactics.’

Sir
Houston
Stewart.

Admiral Inglefield said:—‘The practice of naval tactics ought to be carried out whenever an opportunity occurs. Having been on one or two occasions desired by the Admiral in the Tagus to take out the steam launches, and go through evolutions in the open waters below Lisbon, I found it was an admirable way, and at a cheap rate, of teaching the younger officers to practise in naval tactics. It was with that experience that I suggested how convenient it would be to allow officers on half-pay to assemble on board gunboats at Sheerness or Spithead, and give them that experience in evolutions which had been gained by those who were in the Channel Squadron.’

Admiral
Inglefield.

The chairman, Sir H. F. J. Codrington, wound up the discussion with the following observations:—‘I feel convinced that the fleet that is most practised in evolutions will be the one that will be best in position to fight its battle. It is coming back, as we must come back, to original ideas; we must remember the Roman word for “army” signified “exercise;” so it is with the “fleet,” our word for a “naval army;” we ought to be exercised and drilled continually; and the fleet which is most thoroughly drilled will, in the day of battle, be the best.’

Sir Henry
Codring-
ton.

In the essay on *The Gun, the Ram, and the Torpedo*, to which the prize offered by the United Service Institution was awarded in 1874, Captain Noel, who may be taken as a representative of the younger officers in the service, most strongly urged the more frequent drilling of the fleet in steam evolutions:—‘What we require is such admirable management, such thorough ability and foresight in the manager as will ensure the destruction of an enemy exposing himself

Comman-
der Noel.

to attack (if only for a moment) with the least possible risk of damage to the ship which rams. At present our heavy ironclads are strangers to many of the officers who may be called upon to command them in time of war.

‘The ships of our steam fleet, therefore, we cannot expect to be handled in their way so perfectly as those in the fleets of Sir John Jervis and Nelson. In these days very much more actual manœuvring will be required, every movement will be of more importance, and changes will succeed each other with much greater rapidity than in any action fought between sailing ships. Officers well experienced and thoroughly competent to take command of any heavy ironclad in an action are more than ever required. A great drawback will be found in the immense variety there exists in our ships—hardly two being exactly similar. A captain changing from one ship to another finds difficulty in learning the different merits and vices of his new command.’

The two succeeding extracts are taken from two essays on Naval Tactics, written in competition for the medal of the United Service Institution. The first quotation is from Mr. Laughton’s essay:—

‘From a free fight, such as, after this passage, Lissa became, ten. where all was in confusion, where the obscurity caused by the smoke was so great that, all pretence of order being lost, nothing could be made out, where the maxim Tegethoff acted on was simply ‘Go at everything grey’—not very unlike the old Donnybrook maxim, ‘Wherever you see a head hit it’—little is to be learned in the way of tactical evolution; though important lessons may be derived as to the moral conduct of a fleet, and the value of that practical yet delicate essence of tactics, which, apart from all technical skill or theoretical considerations, must originate with, must emanate from the Commander-in-Chief. There can be no doubt that with very inferior ships and guns, and with newly-raised ships’ companies, the Austrians won the victory because their Admiral knew how to inspire his officers and men with a certain portion of his own courage and energy; whilst the Italian Admiral imparted to those under his command nothing but fear of responsibility and timid vacillation. The ‘Affondatore’ is said to have had several distinct opportunities of ramming the ‘Kaiser,’ and to have refrained from doing so out of misplaced compassion for the weakness of the enemy. No such feeling held back the ‘Ferdinand Max;’ going at everything grey, she charged three or four Italian ships before she finally succeeded in sinking the ‘Rè d’Italia.’ The battle was gallantly fought out by the Austrians, but must be recorded as a victory won rather by

personal gallantry and dash than by any superiority of tactics or evolutionary skill.'

'When evolutionary squadrons and fleets of gunboats or steam cutters are exercised systematically and regularly; when an evolutionary fleet of ironclads is got together each summer, and worked as such for a month or six weeks, regardless of petty economy of coal and stores, unworthy of a great nation, and of a service with ten thousand glorious traditions to maintain; when it is understood that the summer gathering of our ships is for severe drill, and the practice of evolutions; not merely as an occasion for joyous festivities, for the establishment of a raree-show, and the entertainment of our gaping countrymen in the several towns along our coast: then the practical and professional study of tactics will have been really begun; then, we may hope that much that now seems hopelessly dark as to the tactics of the future, will shine out, illumined by the lamp of knowledge.'

The second quotation is from the essay by Lieutenant Charles Campbell, R.N. :—

Lieutenant
Campbell,
R.N.

'As there is at present no special training for officers in signals or in the tactical manœuvres of a large fleet at sea, unless a young officer happens to be stationed in the signals when the ship to which he belongs is with a fleet, he grows up knowing little or nothing about it. I sincerely hope, when the value of the knowledge of tactical evolutions has become more recognised, that a "short course" will be opened for officers who wish to become acquainted with that important branch of their profession, somewhat similar to the "Gunnery short course," which all officers may now attend.'

Sir Cooper Key, in the course of the discussion on Mr. Laughton's paper, said :—

Sir Cooper
Key.

'I have heard people quote a remark of Nelson's in his order of the day before the battle of the Nile, that "in naval battles much must be left to chance," the meaning of which is, no doubt, that we cannot command the wind, or know with certainty what will happen when once ships get into action. It is said by many that this is a true description of what will happen in the future, and that when once a fleet has got into action, there is an end of all signals and all manœuvring—each ship must continue the action in the best way she can. I am satisfied, however, that whichever Admiral can best keep his fleet together and under command after the action has commenced, will win the day.'

In the discussion on a paper on *The Attack and Defence of Fleets*, read by Captain Colomb at the United Service Institution

Comman-
der Daw-
son.

on January 15, 1872, the following observations were made by Captain Dawson, an officer whose able speeches on matters connected with his profession are well known to all students of naval subjects:— ‘There is,’ he said, ‘not a single fact brought forward showing that the British fleet, which costs so much, has done anything to elucidate any of the questions which arise in determining the best way of using the various novel ships and weapons with which it is furnished for purposes of war. I do not mean to say that the fleet has made no experiments, practised no warlike manœuvres, or gathered no useful experience, but I merely draw attention to this circumstance that if any portion of the fleet has elaborated experimentally any facts bearing upon future wars, they have not been brought forward now.’

Captain
Fremantle,
R.N.

The following strong recommendations in favour of a more systematic instruction in Steam Tactics are taken from the naval prize essay by Captain the Hon. Edmund R. Fremantle:—

‘In modern steam fleets,’ says Jurien de la Gravière, to whose writings we have all learnt to look for clear philosophical views of the changes in naval warfare, ‘the good manœuvrers have not been less rare; those who are fairly good (*manœuvriers suffisants*) are become more common.’ We might even go farther and say that in the Royal Navy at least the officers who are really capable of perfect management of an ironclad under steam are less numerous than those who had made a name for themselves as brilliant seamen for their skill in handling a ship under sail in former days.

‘There are good reasons for this. The inherent difficulty in managing a ship under sail, in crowded harbours or narrow waters, almost forced upon any naval officer, who wished to be considered a competent seaman, a serious study of seamanship. The kettle has emasculated seamanship we are told, and in some senses it is true; it is certainly easier to manage a ship under ordinary circumstances under steam; and partly from this cause, partly from prejudice, it has come to be supposed that no study, and but little experience, is required for the manœuvres of an ironclad. The result has been pointed out by Jurien de la Gravière. When a new and improved weapon has displaced a less perfect one, this has been invariably the effect of the change. Thus, when the long bow was replaced by firearms in the days of Henry VIII., we have great regrets expressed at the discontinuance of the national practice with the favourite weapon; but it has been reserved to the present century to appreciate the necessity for perfecting our men in small-arm firing. No doubt it was considered that anyone could hold a shooting-iron straight, it

was so much easier than practising with the bow. This is, or rather has been our case, with regard to the management of steam ships, but we are beginning to awake from our delusion.

‘Modern naval warfare has so changed, and is in such a state of transition, that failing a direct order from higher authority to deal with tactics, modern signal-book committees have agreed to ignore them, except so far as an occasional verbal change in an old signal might adapt it to modern warfare.

‘We are not surprised at the result. It is only of recent years that it has come to be acknowledged that some attempts at least of a solution of the problems of naval tactics may be made. But what a change from the days when the signal book was substantially a code of “Fighting Instructions,” too precise and rigid it may be, but which showed the goal at which fleets must necessarily aim! If we turn to the sister service, we shall find in the Field Exercise Book, under the heading “Application of Drill in Field Manœuvres,” tolerably clear general principles for attack and defence. Cannot something be done in the same direction for the Navy? Are there no broad principles which might be shadowed forth in the signal book? At present it must be admitted that we are groping in the dark. Our evolutions and manœuvres have no direct bearing on battle formations. The signal book is a useful drill book, but that is all, and it is not unreasonable if, in all earnestness and simplicity, we ask for something more than “a halfpenny worth of bread” for this “intolerable amount of sack.”

‘We have put the want plainly, and we believe strongly; but we make no pretension to being original in making the complaint against the code of signals and evolutions now in force, that it is a mere drill book, and that nothing higher is attempted. We propose to conclude this chapter by showing that we are not alone in making this charge.

‘In 1872, in an article on “Naval Autumn Manœuvres,” in *Naval Science*, the author points out many ways in which our evolutions might be made to resemble more closely the tactics of active warfare, and he complains with reason of the “great loss of power in employing a gigantic and expensive fleet to teach the rudiments of drill.” The article was written seven years ago, but we fear that nothing has occurred since to make it less applicable in the present day.

‘If it should be thought that the article we have referred to is too theoretical, or its demands obsolete, we again quote Vice-Admiral Randolph, a distinguished officer of large and varied experi-

ence, whose high qualifications as an officer and a seaman cannot be disputed. The Admiral, writing in the present year, says :—

“No doubt flag officers and others have formed their own opinions and determinations, but these are confined to their own breasts, and where are the younger officers to turn for guidance, or so much as a hint as to the best way to engage either a single ship or a squadron? . . . The army systematically practise operations as nearly as possible resembling those of real battle. Can we do nothing in the same direction? ” Something can and will be done if once the want is felt by naval officers, but in the words of the motto at the head of this essay, “Nil sine magno vita labore dedit mortalibus.”

*Army and
Navy
Gazette.*

Turning from the speeches and essays of naval officers to the columns of the service newspapers, we find the same views put forward in the *Army and Navy Gazette* of February 21, 1880. It is said in the article in question that there is no established mode of instructing the British Navy in naval tactics, the nearest approach being a series of lectures in naval history at the College at Greenwich. It is recommended that a special course of instruction in naval tactics should be established at the College. The employment of a few days only in the year in fleet evolutions, with occasional exercises in the steam launches of the squadron, is very reasonably criticised as a poor means of imparting instruction in a subject of such momentous importance to the efficiency of a fleet.

*Nautical
Magazine.*

In an article on naval tactics in the *Nautical Magazine* for July 1879, the following remarks occur :—‘In most particulars we have enormously raised the standard of efficiency in the Navy. We have introduced system where none existed before, and organisation where chaos reigned hitherto. Taken as units of our force it would be, perhaps, difficult to surpass the efficient state of our individual ships even in the future ; in the past it has certainly never been equalled.’

‘There is, however, one blot in this bright picture which seriously detracts from its excellence as a whole. To use the phraseology of a service better understood and more widely known—even by this maritime nation—than the Navy, it may be said, that the sea service at present resembles an army composed of an aggregate of splendidly organised and highly trained regiments, all glorious in their equipment, which are quite without any knowledge of the methods to be employed in encountering an enemy in battle. Mere perfection in drill, and intelligence in the performance of certain formal peace manœuvres, are very inadequate qualifications for engaging in actual combat, if all knowledge of tactics be absent ; yet this is very

much the case of the British Navy at the present time. The officers readily admit it, and complain of the obstacles in the way of their remedying of their own accord, as they are quite prepared to do, this very serious defect. They make no secret of the ignorance of even the most rudimentary principles of naval tactics which is so widespread in the service. No naval officer disputes the fact: some think that this state of things can hardly be altered; some, perhaps, that it is not important that it should be; others, the majority fortunately, that it is both capable of being changed for the better, and that such change is urgently wanted. The public, it need hardly be said, are deeply interested in this matter. It may well be asked, why should we pay so heavily for a naval protection, which, excellent as it may be in many particulars, has this fatal defect? Can it not be remedied? Does the history of our Navy in former days give us any reason for hoping that it can be?

‘To the last question it may be answered, that the history of not only our own Navy, but that of all other navies which attained any importance in the world, from the most ancient times downwards, has shown that tactical efficiency and naval success went hand in hand, and that the absence of the former led assuredly to the want of the latter.

In support of these opinions of the writer in the *Nautical Magazine* the conduct of our fleets at the outbreak of the great war may be appropriately compared with the incomparable achievements with which the illustrious career of Nelson was brought to a close. The naval historian, James, in describing Lord Howe’s victory of June 1, 1794, points out that that victory was less complete than it ought to have been, owing to the want of vigour and professional ability in several commanders in the British fleet. ‘At the close of the action,’ he says, ‘there were twelve or fourteen English line-of-battle ships without even a topgallant-mast shot away, and some of these ought certainly to have secured two if not four of the more or less dismasted French ships, but although many of the British ships were in a condition for service those very ships had attained their effective state by tardiness in engaging.’ Captain Brenton, in his *Naval Battles*, confirms the opinion expressed by James in his *Naval History*. Captain Brenton says: ‘The British fleets were remarkably well manned, but the officers were generally deficient from want of practice, the natural consequence of ten years of retirement. Some of them had little idea of keeping a ship in her station, either in line of battle or in order of sailing, during the night and in blowing weather.’

Battle of
June 1,
1794.

James’s
*Naval
History*.

Captain
Brenton.

*Black-
wood's
Magazine.*

The following remarks on steam tactics are taken from *Blackwood* of February 1878:—‘Nelson’s genius had made all the necessary dispositions for battle both at the Nile and Trafalgar long before the action commenced; the captains had only to steer their ships for their allotted adversary and the rest was done by the crew. Had Nelson been killed by the first shot fired at Trafalgar, the issue of the battle would have been the same. But how different now! From the beginning to the end of an action rapid and constant manœuvring will be required; the ships must be kept firmly in hand and skilfully guided; all the best experience of the Admiral will be in continual request, and should he be killed or disabled at a critical moment, the consequences would probably be most serious. It is not too much to say that the result of a naval engagement in these days will depend entirely upon the skill of the superior officers, in default of which the courage and discipline of the crews will avail little.’

*Minute,
1870.*

The extracts already given sufficiently show that the younger officers are deeply impressed with the necessity of more constant practice in the management of ironclads under steam. Soon after Mr. Childers became First Lord of the Admiralty he made known to Parliament the views of his naval advisers with unaccustomed frankness in more than one Parliamentary paper on this subject. A minute was published in 1870, reporting on the cruise of the Channel and Mediterranean fleets, in August and September 1869. It contains the following observations:—‘Passing from these considerations, which refer to questions of shipbuilding, my Lords wish to place on record their opinions on some matters of no little interest brought under notice in connexion with these reports. The first is the absolute necessity of keeping Her Majesty’s fleets and ships more at sea, and especially out of the home ports. The evident inexperience in fleet sailing, and of other professional duties at sea, exhibited by many officers, has impressed itself strongly on their Lordships, and on all whom they have consulted, and they trust by a system of frequently exchanging officers and men between sea-going and reserve ships; by the formations of squadrons of evolution, one of which they hope to detach annually; by the constant cruising of the Channel and Mediterranean fleets; and with respect to officers, by so reducing their present redundant numbers as to enable my Lords to keep them more constantly at sea on full-pay, to effect much improvement in this respect.’ The emulation generally observed was a convincing proof to their Lordships that giving officers an opportunity of being more constantly employed would ensure the efficiency for which the Navy has always been distinguished.

The following remarks are from a letter addressed to the editor of the *Broad Arrow* by Captain Long, who had lately returned from a command in the Pacific :—

Captain
Long, R.N.

‘At this moment, when the Chilian and Peruvian navies are sinking each other, no naval officer can peruse your article on Naval Tactics without acknowledging the paramount importance of the subject.

‘One of the most ancient of naval weapons has again been placed at our disposal, but supplemented by motive powers, which render its effectual use far more difficult than of old.

‘The importance of the ram is variously estimated ; but, while opinions differ as to the probable frequency of opportunities for its employment, all agree that its effectual use will be decisive.

‘Under these circumstances, other nations practise their officers in ramming encounters, but although England has spared no expense to ensure her officers and men being instructed in gunnery and torpedo warfare, she seems unaccountably apathetic as regards the most decisive weapon that has ever been placed at their disposal.

‘Is it supposed that the ordinary experience of peace service is sufficient to train the eye and judgment for the critical occasions that must occur in real warfare ? It is possible that it may be so in the case of those officers who are constantly serving in steam fleets, but a glance at the *Navy List* shows that a naval war would inevitably call out many who have not had those advantages, and it would be well if naval tactics could be practically studied by a far larger number of our officers.’

We see the results of want of practice in foreign navies, where disasters are far more numerous than in our own service. In its issue of August 29, 1879, the *Army and Navy Gazette* gave the following melancholy report of the recent experiences of the Russian Navy. It is described as ‘suffering from a plethora of misfortunes, and many fresh additions have been made to the list with which the Baltic fleet commenced its summer manœuvres a month ago. The latest instance is the disablement of the frigate “Svetlana,” which last week grounded on a reef off Biorka, receiving such injuries that she will have to be put out of commission. In the case of the “Peter the Great” and the yacht “Derjava,” both vessels were run upon the sands within sight of Cronstadt. The channel is well marked out with buoys, but the pilots do not seem to have been acquainted with the strength of the current. The “Popoffka,” Vice-Admiral Popoff, ran aground near Nicolaieff, and was only removed from her dangerous position by the united exertions of

Accidents
in Russian
Navy.

half-a-dozen powerful steamers, despatched from Odessa. The monitor "Koldown" and two of its *confrères* belonging to the Sveaborg squadron broke down from sheer infirmity, the engines and boilers of the Russian monitors being in an extremely dilapidated condition. The collision of the cruiser "Zabiaka" and the corvette "Vsadnik" occurred near our own shores, and in one case at least the commander has been exonerated from blame in the matter. Collectively, however, these misfortunes, running so rapidly one upon another, have broken down the patience of the Russian people, and on every side censure is being heaped upon the Navy.'

German
Navy.

The German squadron of evolutions was nearly lost on the 'Gallop' on the passage to Salonica in May 1876, and the loss of the 'Grosser Kurfürst' occurred undoubtedly from the want of practice in fleet sailing among the officers of the German Navy. On the last-named occasion the squadron of four ships was reduced to one ship, in 48 hours after leaving Wilhelmshafen. On the first night one of the ships grounded on a sand bank. On the following day the collision occurred between the 'König Wilhelm' and 'Grosser Kurfürst.'

Steam tac-
tics, Rus-
sian Navy.

Instances have been quoted of the want of experience in navigation in the Russian Navy, and their misfortunes may deter us from following them in any part of the system which they have adopted. In one particular, however, the example of the Russian Navy seems worthy of imitation. For years the officers of that service have devoted the closest attention to steam tactics. Their system is thus described by Admiral Ryder. 'The Russians,' he says, 'have for many years, by exercise at ramming, been working out practically for themselves the great problems, (1) what are the best tactics when two similar ships or more are engaged; and its corollary, (2) how best to distribute any given number of guns in an ironclad design. Both these problems are studied for several months every year in the squadron of instruction in Russia. Several gunboats are fitted with fascines to prevent injury from ramming, and tournaments are repeatedly held in the presence of the superior officers of the fleet. Each gunboat is manœuvred by the captain of an ironclad, assisted by one of his officers and his chief engineer. In this way, every captain in his turn has practical lessons in ramming, and being rammed or avoiding it, which they could not with safety attempt in their ironclads, and all day long and every day one or other of the ironclads, taking it in turn, is under way threading her way backwards and forwards through the anchored fleet; the captain who makes the closest shaves without touching is highly commended,

and if he is unfortunate enough to touch one of the anchored iron-clads, he may be blamed *as a matter of form*, but I was told he was generally to be found dining with the Admiral that evening. The Russians are a very practical people, and Admiral Boutakov, who has commanded that squadron of evolution for the last fifteen years, has brought the science of teaching his young officers what they ought to know, and creating a hearty *esprit de corps* and an *élan* to perfection. It is to be hoped that a naval "Kriegsspiel" will soon be perfected, but it will not be very useful practically, if it is not supplemented by naval tournaments at sea, as in the Russian Navy, in their protected gunboats. These sea tournaments would also throw much light on disputed points in the rule of the road, and settle in a week what the most experienced and practical seamen may go on disputing about for years.

Rear-Admiral Boutakov, the author of the system of tactical instruction established in the Russian Navy, commends its great importance in the following letter, in which, after commenting upon other subjects which had been discussed in Captain Colomb's paper on *Naval Tactics*, he writes as follows:—'As regards what we have heard on February 20 about the question of drilling a squadron, I can only say that in sailing times squadrons were well drilled during their cruises, and if we have now more expensive tools we must have more expensive drills for maintaining the requisite efficiency. The difference in this respect of present armaments from the former ones mainly consists in this, that while we went to sea in sailing ships perfectly prepared from boyhood for what we had to do in a squadron, we now come to sea without that preliminary schooling. Let it be provided for and the difficulty will vanish. Let it be provided, if preferred, by cheap training squadrons of gunboats and despatch boats, which could easily work out and simplify any code of evolutions and signals; but let us not think that any system is bad because we have not studied it, that it is complicated because it looks so at a first glance, and because we do not know that it may be very simple in application when once understood.'

Letter of
Admiral
Boutakov.

Lieutenant Semechkin, the author of a course of lectures on 'Steam Tactics,' delivered at Cronstadt, strongly insisted on the essential importance of frequent exercise in evolutions:—

Lieutenant
Semechkin.

'Le sort des combats futurs dépendra moins de la supériorité des forces que de l'habileté de l'amiral à engager le combat, de la science des commandants dans les combats singuliers, de leur habileté à se soutenir réciproquement pendant l'attaque ou la défense, de leur agilité à se réunir en masse pendant le combat contre les points

faibles de l'ennemi. Pour obtenir tout cela il ne faut pas compter sur les seuls moyens que nous avons actuellement—signaux, télégraphes—parce qu'ils sont insuffisants pour permettre à l'amiral de conduire la lutte. Il faut que les commandants connaissent à l'avance le plan du combat ; les résultats obtenus par ce moyen ont toujours été magnifiques. Mais cela même ne suffit pas ; l'amiral ne donnera qu'un plan général d'action, il restera beaucoup de détails qui devront être étudiés et réglés en conseil par les commandants, et c'est là également que devront être fixées les règles générales du combat et qu'on préparera des décisions pour certains cas éventuels, décisions qui, par la suite, dans l'ardeur de la lutte, seront d'une grande utilité et aideront puissamment au succès.

‘ Chaque navire doit avoir surtout en vue deux choses : premièrement, utiliser son éperon dans toute occasion favorable ; et deuxièmement, aussitôt après avoir dépassé l'ennemi, de prendre son poste le plus vite possible pour recommencer une attaque.

‘ On peut dire, sans crainte de se tromper, que la pratique des manœuvres d'escadre, au point de vue du combat, est plus nécessaire que les exercices d'artillerie. Pendant le combat entre des forces considérables, l'éperon est plus à craindre que l'artillerie. Par conséquent, dans l'instruction d'une escadre, la manière de se servir du premier doit nécessairement être étudiée dans tous ses détails.’

French
Navy.

We have already quoted from Admiral Ryder a description of the system of tactical instruction in the Russian Navy. In a recent speech on Captain Colomb's paper on *The Naval War Game*, he described as follows the practice in the French Navy:—‘ In France, young officers are almost forced to attend on certain evenings at lecture rooms specially provided in each dockyard to discuss important questions of naval tactics. Captain Colomb's game will be introduced immediately. When I was at Brest I asked what the discussion for the night was, and was told that it was what Villeneuve ought to have done at Trafalgar instead of what he did do, and that on the previous day the subject was what ought to have been done by Admiral Brueys, when Nelson attacked at the Nile and destroyed the French fleet, and could anything have been done to prevent or diminish Nelson's success. Young officers who joined in such discussions and war games were likely to form much better tacticians hereafter than those who did not, and they should be encouraged. Secondly, I never could understand why we do not hear the results of the important experiments going on constantly in our large squadrons, the Channel fleet, and the Mediterranean fleet, in the matter of evolutions. We have had, I do not know how many,

squadrons of evolution during the last ten years. Admiral Randolph commanded one of them, and was second in command of another. I have no doubt his mind and his memorandum books are full of important information which he collected. The drawers of some rooms at the Admiralty are full of reports from our best officers on such subjects as "groups," how best to handle them in action. I have no doubt that Admirals Hornby, Beauchamp Seymour, Commerell, and numerous others have arrived at conclusions having the force of axioms. Those officers who have not had the good fortune to belong to these squadrons know absolutely nothing about what has been done, what conclusions have been arrived at. There are officers on shore on half-pay who would be delighted to be allowed to witness these evolutions in a vessel attached to the fleet for the purpose, and I think they ought to be encouraged to do so, for by that means and by that alone can they obtain that amount of knowledge which is so absolutely necessary and would be so much prized. I am not speaking for my own advantage, my naval career is well-nigh ended. I speak in the interest of the country and of the junior flag officers and senior captains.'

In confirmation of Admiral Ryder's remarks on the tactical instruction in the French Navy, I may perhaps appropriately mention that, while at Hyères last year, I had an opportunity of observing the system adopted in the French squadron of evolutions. The fleet at Hyères consisted of eight ironclads. They weighed anchor every morning while I was in the roadstead, four days in succession, at 8 o'clock, and remained under steam several hours performing steam evolutions. It would appear that much more frequent practice is considered necessary in the French service than in our own Navy.

It seems desirable that something should be done to satisfy that desire for knowledge, which does so much honour to the service. When the Channel and Reserve fleets are brought together for tactical instruction, would it not be well to provide facilities for a certain number of officers to accompany the fleet during the cruises? Would not the appointment of a committee to revise the signal book at frequent intervals be attended with advantage? Is it desirable that officers, on whom we rely to take our ironclads into action, should be allowed to remain six years on shore, without any means of keeping their hand in for the difficult art of manœuvring at close quarters with other ships of equally formidable dimensions in rapid motion, or for the far graver emergency of an actual engagement? If this long interval be detrimental to the full efficiency of the Navy in its higher ranks, is

Observations and suggestions.

it impracticable to give to captains short appointments in an evolutionary squadron? Under present arrangements officers can go through a short course in gunnery and at the torpedo school. It may be suggested for consideration that there should be a short course of practical instruction in tactics, and that the flotilla of gunboats at Portsmouth might be usefully employed in exercises similar to those now practised at Cronstadt.

half-pay.

The long periods for which officers are compelled to remain on half-pay, after their promotion to the rank of captain, is a very serious question. It is fortunate that the lieutenants are, as a general rule, efficient, before their advancement to the rank of commander; because as commanders they usually spend a considerable time on half-pay. So again, on promotion to the rank of post-captain, an officer usually passes six years on shore before he is again employed. This long interval covers a most important period in the very prime of life, and that in a profession in which an enforced suspension of activity prevents an officer from keeping pace with the rapid and indeed revolutionary changes in the material and in the methods of naval war. Officers, who have been suddenly called away from their clubs in London, or their farms in the country, to the command of large ships, must sometimes be ill at ease in their unaccustomed situations, and fail to handle a monster ironclad with precision and confidence. It was truly said by Admiral Jurien de la Gravière in *La Marine d'Autrefois*:—‘ Dans la marine, on ne commence à soupçonner le danger que lorsqu’on commande. De soudaines conversions s’opèrent bien souvent alors. On voit des officiers que rien n’intimidait devenir des capitaines d’une prudence outrée. Le manque de résolution a perdu presque autant de navires que l’imprévoyance. D’hésitations en hésitations on peut être conduit sur les rochers tout aussi bien que si on les eût été chercher tête baissée.’

fami-
liarity
with dan-
ger gives
confidence.

Fraser.

In an able article, which appeared in March 1877, in *Fraser's Magazine*, the evil result to the Navy of long periods of half-pay is very emphatically stated. An ironclad, as it is truly remarked by the writer, is a complex puzzle to an officer, who may be a good disciplinarian of seamen of the old school, but who is quite ignorant of steam. Who can wonder, it is asked, that such a man is nervous under a responsibility to which he must feel that he is unequal? Many who would be our best officers are married men with small means, who cannot afford to devote their time when on half-pay to study at Portsmouth and Greenwich. As a post-captain half-pay ranges from 228*l.* to 301*l.* a year. Many of these men are buried

in some out of the way part of the country where they seldom even see a paper, yet after some five or six years of half-pay they are called upon to go to sea, probably to command a small vessel on a distant station. After this apprenticeship and another year on half-pay they may be intrusted with ironclads costing nearly half a million. That this ensures efficiency can scarcely be seriously argued, yet it is the natural outcome of the half-pay system, which only exists in the Navy of England, and which foreign navies have been much too wise to adopt.

It reflects no small credit on the British Navy that our officers under such disadvantages attain to such a high degree of proficiency in their profession. It is necessary to have a large reserve of officers, and it is unreasonable to propose that an immense expense should be incurred in keeping ships at sea, merely for the sake of giving employment to the captains in command. Some plan should, however, be devised by which captains may be enabled to keep up their professional knowledge, at a time when the Navy is undergoing perpetual transformation.

Plan for
instruction
in steam
tactics.



SECTION IV.

NAVIGATION OF H.M. SHIPS.

SPEECHES IN PARLIAMENT,
JUNE 7, 1872. APRIL 25, 1876

SPEECHES IN FAVOUR OF ABOLISHING A SEPARATE
AND DISTINCT BRANCH OF OFFICERS FOR NAVI-
GATING DUTIES,

*By Lord Suleley and the Compiler, in the House of Commons,
June 7, 1872.*

Extracted from Hansard's 'Parliamentary Debates.'

Skill in
pilotage
essential to
captains
and com-
manders.

MR. HANBURY-TRACY: The question which I am desirous of bringing before the House is the present system under which our ships and vessels are navigated; and, although I much fear that the discussion must, to a great extent, prove uninteresting and technical, yet, as I believe it is a matter of the very gravest importance, I trust the House will allow me to go somewhat fully into the subject. Under the existing arrangement, it is well known that a separate class of officers formerly termed masters, now called navigating officers, is maintained for the distinct duty of what is termed navigation and pilotage, whereby it is supposed that a more competent set of navigators and pilots are obtained than could be procured if these duties were undertaken generally by the executive branch. I am anxious to show to the House, that even if it were necessary to have the duties restricted to one branch, the present system has of late utterly broken down, and must be entirely remodelled; and, secondly, I wish to prove that the only true alteration and satisfactory solution must lie in the entire abolition of a separate grade, and in throwing these duties to a far greater extent than at present upon the captain and commander of a ship. I maintain, Sir, the knowledge of practical navigation has of late been neglected very much by our executive officers, and it has come to be considered a totally secondary consideration, instead of being, as it certainly ought to be, of primary importance. Officers seem to forget that unless a ship is skilfully and safely navigated any other qualifications they may possess are of little avail, and they do not consider that unless a ship is properly handled

and piloted, not only are the lives of all on board endangered, but she is rendered utterly and entirely useless. It seems to me perfectly absurd and ruinous in the highest degree to allow our officers to look upon these duties as trivial; and yet, Sir, unhappily the long list of vessels which have got ashore during the past ten years seems to prove conclusively that this state of feeling is spreading, and that there is something radically wrong in the system under which our vessels are navigated. In the present day, the handling of one of our large ironclads is no easy task, and is a very different thing to what it was in the days of sailing vessels. You go now at terrific rates of speed—18 and 20 knots an hour; you have huge and clumsy vessels to deal with, and the difficulties are increased tenfold. At no period of our history was it ever so essential to guard with the most scrupulous jealousy, that the safe navigation of ships was in fit and proper hands; and yet, notwithstanding this, you still retain the old anomaly of having sea nurses for your captains with divided responsibility, and actually prevent your commanders and captains from acquiring that intimate knowledge of practical navigation and pilotage, and that confidence in themselves, which it is impossible for any impartial man to deny must render a captain infinitely more competent to command. You admit that in all the great passenger fleets—in the Cunard, in the Peninsular and Oriental Company, and in the whole mercantile marine of the world, and in every foreign navy—the captain is not only responsible in name, but in deed. It is considered in all those fleets that the captain, with proper assistance, is the only man who can do the work properly. He alone can alter the course, make and reduce sail, ease and increase speed, being the only person on board who is perfectly free and uncontrolled. He it is who is entrusted with the lives of all on board. But, Sir, in the English Navy—which you pride yourselves is the finest in the world, where you have vessels worth half a million of money, where you have interests committed to its charge of the greatest and most vital importance, second to none other—you entrust this great duty of navigating your ship to another officer, and that officer one whom you take no trouble to render competent—an officer who, from the time he enters the service, seems to have no friend, is looked down upon, and is made a drudge of. You give this officer no authority—he cannot make the slightest alteration in the course without leave of the officer of the watch—you give him no social status equal to his brother officers; and, to crown all, you take away all prospect of promotion, and every inducement to become zealous and energetic.

No special
training
for navi-
gating
officers.

Is it to be wondered at that high-spirited officers placed in this extraordinary position become discontented; and is it surprising that the other officers look upon the duties performed by the navigating branch as of secondary importance, and that your captains arrive at that rank without having paid any attention to what they consider the navigating officers' work—a duty of a separate branch? It is very easy to understand the theory which is sometimes advanced that pilotage and navigation are such peculiar duties, requiring such delicate and careful manipulation, such experience, such confidence, and such intimate acquaintance with harbours and vessels, that it is necessary to have picked officers for this particular duty, who, by devoting their lives to this one subject, become most able and skilful navigators, and that in this manner a superior race of pilots and navigators can be trained up. But, Sir, without going into the question for the moment as to whether or not it is beneficial to have this trained body of men, it is an actual fact—which I defy anyone to disprove—that at this present moment you have not got them, and that your navigating class, separate though they may be, actually receive no special training, and are not selected. If we look back two centuries, and even up to fifty years ago, we find to some extent that this theory of having a trained body of officers was carried out.

Origin of
a special
branch for
navigation.

In Henry VIII.'s time, when war ships were first built, no attempt was made to organise a professional race of naval officers, and in lieu thereof masters of merchant ships were specially selected as good navigators, and were put in charge of the equipment, stowage, and navigation; and the fighting of the ships was entrusted to military admirals and captains quite innocent of all knowledge of seamanship; and thus soldiers fought the ship, and a few seamen were engaged to take the fighting machine about. As far as I can discover, the French first commenced to organise a naval profession in 1672, and we quickly followed suit, though retaining the masters of the merchant navy to assist.

Masters
abolished
in 1697.

Now, Sir, comes this extraordinary fact. I find that as the race of our naval officers grew up well trained in nautical knowledge, that when Lord Pembroke was first Lord of the Admiralty, in the year 1692, the evil of confining the professional knowledge of navigation to one man was found so great that an order was actually issued that all commanders of ships were to pass the Trinity House and be examined as master; and five years after, in 1697, we find another order was issued by Lord Orford that the race of masters were gradually to be abolished, and the captains of sixth rates were

ordered to do the navigation duties themselves, and to be called 'Commander and Master.' This state of things appears to have remained in force until the breaking out of the French War, when, unfortunately, it was found necessary to expand the Navy enormously, and for this purpose a large number of masters were once more introduced into the service from the merchant navy. At the close of the French War the service had got so accustomed to trust to the master for the navigation, that no one liked to abolish them; and as time went on they became indispensable, as officers neglected navigation more and more, and in many cases captains, when appointed to their ships, had been so long unemployed, that they clung with the greatest tenacity to the master class. These old masters who were introduced were generally of a mature age; they brought with them experience, great practical ability, and their superior seamanship commanded respect. They also had great incentives to zealous work, and looked forward cheerfully to lucrative appointments, which were then open to them. In those days there was one special reason which prevented the line getting as strongly marked as it now is—namely, that a large number of midshipmen and mates were continually being sent away in prizes, and who thus at an early age acquired confidence and experience as navigators. We thus see that up to the close of the French War the theory of having selected officers was carried out by introducing picked men from the merchant service who were thorough seamen, thorough navigators and pilots. But, Sir, from the year 1824 to this date this selection has, I fear, been entirely swept away.

Revived in
French
War.

Who are now our specially trained and picked officers? Where do our officers obtain that knowledge which so peculiarly fits them as pilots, and which gives them such an intimate acquaintance with all the harbours and channels of the world? I fear that the answer to these questions cannot but show up the hollow farce which has been enacted since 1824. In that year you ceased to select from the merchant service, and commenced to rear up a special branch of navigators from lads of about sixteen who were entered as masters' assistants. Unfortunately, Sir, this special training has been a perfect myth. You commenced by giving these nominations in many cases to boys who were very much inferior in general ability to your cadets in the other branch. Admiral Sullivan and Admiral Fanshawe gave rather strong evidence on the point before the Committee on Masters in 1862. Admiral Sullivan said:—

Want of
care in
selection of
navigating
officers.

'I have known those appointments given in succession to second-rate tradesmen's sons of a naval borough; so that I heard once a

man who examined them say, that out of a long batch there was hardly one who had even the appearance of being a gentleman's son. I think that has not been so for many years now; I think that they are generally much of the same class as the executive rank.'

Admiral Fanshawe said:—

'In the last ship that I was in, the masters' assistants were immeasurably inferior to the naval cadets in all the subjects in which tabulated forms came in to me, and in their studies under the naval instructor they were always the worst, and it was the same in other things. They were dull; they were not easily stirred up to compete, and there was not much emulation amongst them.'

Want of
special
training
for naviga-
ting
officers.

Of course there have been bright exceptions, and several sons of old and distinguished officers have entered under these nominations but still far too large a number of lads without ability or position have been considered sufficiently qualified to train up as navigators. Well, Sir, from the day these lads enter, instead of attempting to repair the damage of defective early education, every obstacle is thrown in their way against obtaining knowledge as seamen and navigators. You station your young navigating officers in the store rooms, holds, and tiers, instead of obliging them to be constantly on deck, where alone they can obtain an insight into their peculiar calling. I am well aware that of late years a slight improvement has been made in this respect, especially in the Mediterranean Station; but, practically, it is still in force generally throughout the service; and, as a matter of fact, I apprehend it cannot be denied that hardly any training is given to the navigating officers before they are placed in charge of vessels. Even when these officers are passing their examination, you do not allow them to go to the Naval College. Nobody seems to care for them; and it is a perfect marvel to me how they are able to get on at all. It is generally admitted that, in nine cases out of ten, these young officers gain their experience after they become navigating lieutenants. In the Baltic some very curious instances of this kind occurred. Admiral Sullivan, in his examination on this point, said:—

'In the Baltic the second master of a flag-ship, when offered a death vacancy, went to the master of his own ship and said—"I am afraid to take it, I know nothing of pilotage and navigation, and I should be afraid to pilot the ship; what had I better do?" The master argued with him, and said—"You will soon pick it up, I daresay, and you will do as well as the others." He took the post, feeling his incompetency. . . . Some of the young masters in the Baltic were really so incompetent, that the things done there were

almost incredible, and several captains complained to me of the utter uselessness of the masters, that, for the first time, they had been obliged to take the navigation and pilotage upon themselves, and learn it as it were, because the masters were utterly useless; therefore it is clear that they had not had the training before they undertook the duties. . . .

Admiral Key, who is well known as one of our most distinguished officers, alluded strongly to this point. He was asked by Captain Richards :—

‘Do you think, as a general rule, that the practical part of a navigating officer’s duty is learnt after he becomes a navigating officer by experience afloat?—After he has become a master. Just so?—In the early part of my service, masters’ assistants and second masters were educated in the holds of ships; and I have known a great many instances in which they have been suddenly brought on deck to be put into the position of masters of ships.’

I do not mean to imply that you have not some very competent navigating officers; but the result of this curious system is that you have frequently many of your ships in the greatest possible danger during the time that the navigating officer is acquiring experience. I can perfectly understand that some men should have such a high opinion of the difficulties of navigation as to think it necessary to train up a special class selected for that duty; but I cannot comprehend on what possible ground you can defend a special class without special qualifications. Can any reasonable man deny that if you have a navigating class they ought to be selected for their peculiar fitness for that office?

Now, Sir, I hope it will not be thought that I wish to disparage or cast a slur on the navigating officers as a whole. I am well aware that you have among them some very clever and distinguished men. After these officers have acquired experience, many of them become very clever pilots and navigators, notwithstanding the continuous slight and annoyance they are daily subject to, and notwithstanding the fact that they are an isolated body without promotion to look forward to, or any real inducement being held out to them to work. Some nine years ago, when discontent had reached a point which could not be ignored, the Admiralty attempted to make the position of what was then called masters somewhat more tolerable; but like most half measures, the remedy has completely failed in giving satisfaction. The name of master was then abolished, and the cognomen of navigating lieutenant and staff commander were introduced, making them retain, however, their old position as

Concession
of relative
rank to
navigating
branch.

ject to the discontent of the whole. The result of the change has, I fear, rendered matters much worse. It has had the effect of drawing the men of a navigating class much nearer and nearer. Even the additional rank which was given is a sign with the men amount of gold lace, has proved a matter of heart-burning and enmity. You have not, and cannot do away with the peculiar inferior social status they are placed in. Unfortunately, there is still going throughout the service an amount of grumbling and discontent which has the effect of making officers indifferent to their work and must prove a source of weakness in time of danger. Navigating officers find themselves hampered at every turn in carrying out their duty; constant irritation must beget slovenly work. You may depend upon it that officers will not do their work efficiently when they are discontented.

Report
submitted
by Com-
missioner

I will not, Sir, dwell further on this part of my motion. Whatever course it may be found necessary to take, I am confident that matters cannot remain as they are, and I think I have proved that even if you continue a separate class the present system is so unsatisfactory that it must be entirely remodelled. But, Sir, let us examine my second proposition—that the only sound remedy is total abolition and to throw these duties on the executive officers. During the last ten years there have been three Committees which have more or less examined into this subject, and have brought together a mass of most valuable evidence, a portion of which I will quote from. We have the report of the Committee on Naval Promotion and Retirement; secondly, the report of a Departmental Committee; and, thirdly, we have the report of the Committee which inquired into the question of the Higher Education of Naval Officers.

Memoran-
dum by
Captain
Washington

Captain Washington, the late Hydrographer of the Navy, drew up a very carefully expressed memorandum, which he laid before the Committee of 1862. In this paper he shows very clearly the prejudicial effect this separate branch has on the other officers:—

‘I think it cannot be denied that the system of entrusting the pilotage and navigation of Her Majesty’s ships to a single class, as masters, must have a tendency to beget indifference or inattention to those particular duties in the lieutenants and other officers of the main executive branch. It can hardly be expected that a young officer, who knows that when once he has passed his examination at the Naval College, he will probably never be called upon to navigate a ship, should keep up his knowledge of navigation or astronomy. The master is specially appointed to attend to such duties, and why should an executive officer give himself any trouble about navigation, unless

he has a special taste for the subject? On the other hand, by throwing the work and responsibility of navigating and piloting and conning the ship on the lieutenants and other officers of the executive branch, a more general acquaintance with those duties would be cultivated and diffused throughout the service; emulation would be encouraged, and those who might subsequently be called upon to command Her Majesty's ships, even if they had not performed the special duties of a navigating officer, could not fail to have a more general knowledge of those subjects, and thus prove far more efficient commanders and captains.'

Then, again, Sir, we have the strong testimony of Admiral Sullivan, and it must be remembered that both of these officers have been surveying captains, and therefore having studied the question in a practical form are most competent to form a true and unprejudiced opinion. Admiral Sullivan was asked:—

Admiral
Sullivan.

'Do you think it would be beneficial to Her Majesty's naval service in general if the class of masters, second masters, and masters' assistants, were done away with as a separate branch of the service?—Most decidedly. I think that the present system is merely the result of the old custom, when sailors only navigated ships, and soldiers fought them; and that has been handed down by degrees until the service is totally altered, and yet the anomaly of the separate class is retained; that is the only reason that I have ever been able to see in the slightest way for having two classes of executive officers in a ship.'

I know, Sir, that some officers think that these opinions are only shared by surveying officers. Indeed, I was gravely informed the other day, that no captains or admirals who had sailed with a fleet were in favour of the change.

Now, Sir, it so happens that we have unmistakable proof to the contrary. We have the recorded evidence before the Committees of seven admirals and eleven captains in favour of abolishing the separate grade as at present constituted. These names include some of our most distinguished officers, and they cannot fail to carry great weight in solving the question. We find amongst them Admirals Sir Spencer Robinson, Sir William Hall, Sir Frederick Nicholson, Sir B. Sullivan, Hon. J. Denman, Fanshawe, Cooper Key; Captains Goodenough, Corbett, Arthur, Moorman, Bradshaw, Chatfield, Shortland, Field, Rice, Rolland, and Nares. But, Sir, these are only names of officers who have given official evidence. I could, if it were required, quote a long list of other distinguished and gallant officers who are in favour of the change; but I have thought it best to

Witnesses
in favour
of abolition
of navi-
gating
branch.

confine myself exclusively to the evidence which is now on the table of the House. The evidence of some of these officers is so much to the point that I hope the House will allow me to read a few extracts. I find that Admiral Fanshawe, who is now Commander-in-Chief of the North American Station, stated in evidence :—

‘I should propose that the regular naval service should do the masters’ duty altogether, and that the masters should cease to exist as a separate class. I think now, taking the service as it is, that they are what might be called an unnecessary excrescence upon the service; it was not the case in olden times, but it is so now. . . . I feel very strongly now that the circumstances under which the masters were beneficial to the service as a separate class have passed away, and that, being no longer beneficial to the service, it is very desirable to get rid of them as a separate class. . . . I think it stands to reason that a man who has had those duties to perform, and has navigated a ship, and had the responsibility attaching to it as lieutenant, would have perfect confidence in himself as a captain.’

Then Admiral Sir Frederick Nicholson, who was a commodore, and was some years in China, stated :—

Sir F.
Nicholson.

‘Many young officers work up their navigation so as to be able to pass their examinations, and then it dies away entirely out of their minds. But I do not see any difficulty in making captains entirely responsible for the navigation. I think that the divided responsibility between the captains and masters has always been a drawback, both with respect to the navigation and pilotage. I dare say, if the thing could be traced out, ships have got on shore, and may even have been wrecked, owing to that divided responsibility.’

Admiral
Denman.

Admiral Denman, who has only lately been in command of the Pacific Station, when asked if he would do away entirely with the masters as a class, said :—

‘I would. I think great advantage would accrue from it, as introducing more harmony into the service.’

And then he was asked :—

‘Would not the frequent change of the navigating officer on his promotion or otherwise deprive him of the experience necessary for the safe conducting of our large ships?’—‘I do not think so at all. I think that the attention of some of our ablest officers would be constantly given to the subject, and all officers would give more attention to it than they do now. I think you will find that at the present moment that objection would apply to the masters of one half of our large ships—namely, that they are very young masters—masters of six or seven years’ standing. I consider that the special duties of a

master are not in any degree more difficult to learn than the duties of seamanship in general; and that any man who is a thoroughly good seaman, and an educated man, could, in a very short time, acquire all the special knowledge which is required of a master.'

Admiral Sir Astley Cooper Key, who has been appointed to superintend the College at Greenwich, and is most deservedly regarded as one of the most scientific officers in the service and one who probably knows more about the requirements of young officers than anyone else, was asked:—

Sir Cooper
Key.

'You are aware that the question of the abolition of navigating officers as a separate class has frequently been urged upon the Admiralty. Supposing that measure should ever be adopted, do you think there would be any difficulty in inducing sub-lieutenants and lieutenants to qualify themselves for the performance of navigating duties on board ship, including, of course, pilotage?'—'No; I do not think that there would be any difficulty whatever in finding a sufficient number of sub-lieutenants and lieutenants to qualify for those duties.'

The evidence of Admiral Sir W. Hall, well known as Nemesis Hall, is also very important. This officer was at one time a master, and was promoted for gallant conduct in China. There is, perhaps, no one who from actual experience, first as master and then as captain of a ship, has a better right to be heard. He stated, before the Committee:—

Sir
William
Hall.

'I have long been of opinion that the line of masters, from their not having sufficient rank, and not receiving that encouragement to which from their services they were entitled, ought to be done away with altogether, and that well-qualified lieutenants ought to be selected to navigate the ship, under the captain, and that the navigating lieutenant should undertake all the duties that the master has now to perform, with better pay, and the same chances of promotion as the other lieutenants. I have known during my long service many ships nearly lost by running on shore and foul of other vessels, for want of the authority which, as masters, they ought to have possessed. I have known the leadsman taken out of the chains, the mastheadman called down to wash decks, and a request to just lower the peak, or hoist the jib, to clear danger, to have no attention paid to it by the lieutenant of the watch. In fact, there has always been a sort of jealousy and rivalry existing between the master and the other officers, and I have found that the public service suffers by it.'

Then, Sir, we have also the testimony of Mr. Pullen, a master of

Mr. Pullen.

considerable standing, in favour of the change, and being in command of a vessel, he speaks from his experience, not only as a navigating officer, but also as a captain, thoroughly versed in these duties. He says:—

‘My opinion is that you would add considerably to the efficiency of the officers in the service if the masters, as a class, as they are at present, could be done away with. I am speaking now as a master in command of a ship; I think that the entire navigation of the ship, and all the responsibilities attached to it, ought solely to be entrusted to one person. I think that that is the duty of the captain of the ship. . . . My ideas may be peculiar upon that point. I am in command of a ship myself, and in the position that I occupy, I feel that I could not tolerate anyone in her to navigate under me—in fact, I do it all myself. I take the sole responsibility of whatever happens in that ship, and I am ready to abide by it myself. I could not leave it in the hands of another man to do this work for me. Moreover, when the captain of a ship has this responsibility, he will take care, whenever he is in pilot waters, that all the energies of the officers and the crew of the ship shall be devoted to looking after her safety.’

Existence
of a navi-
gating
branch
creates in-
difference
to navi-
gating
duties in
executive
officers.

There is a great deal more of similar evidence; but what I have already quoted appears to me to prove that however badly the system may work, so far as it relates to the navigating branch, it is the source of far greater evil, of far greater mischief to the service generally. It is impossible to deny that lieutenants, commanders, and captains are lulled into a state of apparent security in all that relates to the navigation of the ship, owing to the presence on board of this special branch. They naturally reason that it is not their duty to look after the navigation, as that is in the hands of one man who has it under his peculiar guardianship. Directly a sub-lieutenant passes an examination at college he throws aside his books, being well aware that nearly all the subjects he has qualified in will never be required of him again. He may have gone through a brilliant examination in nautical astronomy, and may have, after an infinity of labour, come out the first or second on the list as an accomplished navigator, and yet from that very moment he is well aware that until the end of his career all incentive to continue his studies is gone. He knows that in future all he will have to do will be to send in a few formal days' work to the captain, take a few sights during his watch, but that no practical work or real responsibility will be required of him, and that he will be for ever debarred from following out or calling into use that knowledge which he

has taken such pains to acquire—and which he may be peculiarly fitted for. Can it be wondered at that the result is so deplorable that to the great majority of officers nautical astronomy and the theory and practice of navigation soon become forgotten, and that on all these subjects which your naval officers ought to be so accomplished in, the mind becomes a blank? Surely, Sir, it is melancholy to reflect how entirely this process has the effect of alienating the watchful care of all the executive officers of the ship. If anything were wanted to show this more conclusively, perhaps nothing could prove it better than the late catastrophe which occurred to the ‘Minotaur’ and ‘Lord Clyde.’ In the first case you find the admirals and captains resting with the blindest possible faith on the staff-commander’s knowledge. It was apparently the general feeling that it was nobody else’s business to attend to the navigation, and the result was that one of your finest ironclads drifted on to a well-known rock in broad daylight. In the second instance—that of the ‘Lord Clyde’—you had on board a very superior and able navigating officer, but notwithstanding this, and clearly owing to the want of a general knowledge of practical navigation on the part of the other officers, and the absence of all precautions, this ship was allowed to drift helplessly ashore. The captain and officers of the watch seem to have been in a state of helpless apathy as regarded the true position of the ship. We see in this instance, as in many others I could quote, no care taken when the officers relieved watch that the position of the ship was accurately placed on the chart. In some ships you have chart-houses on deck supplied, and yet in too many cases, instead of the officer of the watch being able to consult the chart, as he is able to do in nearly every foreign navy, no facilities whatever are afforded. I have alluded to these two cases as being the most prominent as pointing out with the most fatal precision the defects of the existing system. Now, Sir, I am well aware that although I have quoted the names of several most distinguished officers who are in favour of a change in the present system, my right hon. friend at the head of the Admiralty will undoubtedly be able to bring forward an equally long list who are opposed to the alteration. I am free to confess that amongst the senior officers—the admirals and captains—there may be even a majority against me, and I do not think it is to be wondered at that officers who have been brought up under the old system should cling to it; but, Sir, if you were to poll the junior officers, the lieutenants and commanders, I am confident there would be found an overwhelming preponderance in my favour. Whatever importance the House may

attach to these opinions, there is one argument in favour of improving the navigation of our ships which I know cannot be gainsaid and must carry with it immense weight.

Statistics
of losses in
the Navy
from bad
navigation &c.

I have spoken of two catastrophes—those which happened to the ‘*Minotaur*’ and ‘*Lord Clyde*’—but these are a very small fraction of what have occurred. Thanks to the courtesy of my hon. friend the Secretary to the Admiralty (Mr. Baxter) I have been permitted to see an epitome of all the courts-martial and courts of inquiry which have been held during the past eleven years, and from this data I have arrived at this astounding result. During the last eleven years—from 1860 to 1871—no less than 106 ships have been stranded. In forty-one of these cases no blame was actually attached; but of the remainder sixty-five the courts of inquiry clearly showed that they had got ashore from bad navigation. In thirteen of these cases the vessels were never got off. Can it be denied that with these figures before us great improvements ought to be made in the navigation of our ships? Now, Sir, I have gone carefully into the value of these ships which have been stranded, and although I have taken the accounts considerably under what I should have been perfectly justified in putting them at, yet, after allowing a fair depreciation for the time they had been employed, I think the House will agree that the figures are rather startling. Of the 106 vessels, twenty-six were small, some of them gunboats, which at 20,000*l.* were worth 520,000*l.*; seven ironclads, which at 250,000*l.* were worth 1,750,000*l.*; and seventy-three were various vessels, which, at 70,000*l.* each, were worth 5,110,000*l.*; so that the value of the vessels stranded was 7,380,000*l.* No blame was attached in the cases of thirteen gunboats estimated to be worth 260,000*l.*, and twenty-eight other vessels, worth 1,960,000*l.*, making a total of 2,220,000*l.*; which, deducted from 7,380,000*l.*, left a value of 5,160,000*l.*, endangered from careless navigation. The approximate value of ships lost from stranding through bad navigation was as follows: one line-of-battle ship, 150,000*l.*; three gunboats, 60,000*l.*; and nine other vessels, 630,000*l.*—making the total approximate value 840,000*l.* To this must be added the cost of repairing the sixty-five vessels that were got off, which might be put down at 250,000*l.*—so that the total value lost was 1,090,000*l.* I am quite confident that I have very much understated the value, and yet we have this astounding fact—that in eleven years no less than 5,160,000*l.* worth of property has been run ashore and placed in jeopardy from careless navigation, and 1,090,000*l.* worth actually lost. In the reports of many of these courts of inquiry it is only

too evident that if full and entire responsibility had rested on the captain, and he had been the duly qualified and competent navigator of the ship, with a skilful assistant under him, many of these accidents would have been avoided. It is true that a certain dual responsibility rests with the captain, and that of late years, since the loss of the 'Conqueror,' an attempt has been made to draw the reins tighter and to make the captain more so. The recent courts-martial have endeavoured to drive home this responsibility more and more. I rejoice to see it, as pointing clearly the direction you must take of making the captain absolutely responsible. What you do is this—you place the navigating officer to do the duty, being well aware that the captain has had no experience in the practical work, and yet, if the ship gets ashore, you make the captain liable. I ask the House, can anything be more absurd? What I urge is to make the captain capable, make him a good navigator and pilot, and then by all means make him responsible, giving him a competent assistant. It is true some captains do even now navigate their own ships, and will not allow this duty to be thrown entirely on the navigating officers; but I fear these instances are rare.

The strong action which my right hon. friend took after the court-martial on the 'Agincourt' in dismissing those gallant officers who were in command, showed that he thoroughly appreciated the principle that the ship ought to be in charge of the captain absolutely, giving him whatever assistance may be necessary; but that on him, and on him alone, must lie the *onus* of her safe-conduct. The strong reprimand which was then administered most certainly had a very beneficial effect; but, still, every impartial man must allow that these gallant officers were very harshly dealt with, as it was the baneful effect of the system which was really at fault, and they only acted in blind adherence to the old tradition of leaving all to the navigating officer. Sir, the abolition of the navigating branch is no new idea advanced by me: it has for a number of years attracted great attention by the different Boards of Admiralty. I understand that when the right hon. baronet the member for Droitwich (Sir John Pakington) was at the head of the Admiralty, in 1859, he determined to try the experiment, and in one noted case he sent for a young commander, and asked him if he would take the vessel without a master. The reply was, that he was not fit to command unless he could also navigate. The ship sailed, and was very well navigated. When the Duke of Somerset came to the Admiralty he was opposed to the change; but, after having been at the head of affairs for some years, and having seen how badly the

Abolition
approved
by Sir
John
Pakington.

system worked, he came to a very different conclusion. After long and anxious consultation, he deliberately determined to abolish the navigating class. Lord Clarence Paget, in 1865, when Secretary to the Admiralty, announced this policy. He said :—

‘The result to which we have arrived is that, upon the whole, it would be better to let the class die out. We propose to appoint lieutenants who would do the work quite as well as the masters, whom, however, I would not at all disparage, for many a time have I had to thank my stars for having a good master. I believe, however, under the extremely difficult circumstances of the case, brought about, I am bound to say, by the masters themselves, the lieutenants will replace the masters with advantage to the service.’

Duke of
Somerset,

The Duke of Somerset, assisted by my right hon. friend the member for Pontefract (Mr. Childers), who was then at the Admiralty, had the foresight to see in what a dangerous condition we should be placed during war time if this canker worm were not rooted out; and, cutting aside all the deep-rooted prejudices which clung round the question, he stopped the entries, and thus paved the way for gradual abolition. Unfortunately, the Duke did not remain long enough in office to carry this alteration out, and he was succeeded by the right hon. Baronet the member for Droitwich (Sir John Pakington), who at once reversed the important step which had been taken, and commenced re-entering navigating cadets, and which was continued by the right hon. member for Tyrone (Mr. Corry). When my right hon. friend the member for Pontefract (Mr. Childers) came into office, notwithstanding the enormous amount of work which he found thrust upon him, he seems to have determined to carry out the Duke of Somerset's policy of gradual abolition, and for this purpose he placed the entry of navigating cadets on exactly the same footing as naval cadets, and I am sure that if he had remained at the Admiralty the class would have been allowed to die out. Some officers, I know, think that you can retain a separate class, making an immense change for the better, by giving special training, special inducements, and, above all, having selected men; but, Sir, I much fear that whilst you may improve the status of this class, whilst you may also lessen the number of disasters by these alterations, the one evil you will not remedy is the very one I attach the greatest importance to—namely, the absence of all inducement on the part of the other officers—your lieutenant, commander, and captain—to attend to this great branch of a seaman's duty, and the natural consequence is that the captains of your ships will still be deprived of that confidence in their own ability to navigate, which I hope to

and Mr.
Childers.

see absolutely essential as a qualification in a captain. It is absurd to believe that any expedition could be fitted out by private enterprise where the captains were not made the actual navigators and solely responsible. When Captain Sherard Osborn fitted out his China squadron, what did he do? Why, Sir, he made the captains navigate their own ships. He stated before the Committee:—

Captain
Sherard
Osborn.

‘When, in 1863, I had to organise a naval force for the Chinese Government, I consulted Captains Burgoyne, Charles Stewart, Nicholas, Noel, Osborn, Captain Allen Young and others, and I deliberately made each of them responsible for the navigation of their ships, and their logs and work books were admirably kept. The ships were most successfully piloted, and many of those naval officers have expressed subsequently their obligation to me for having compelled them to acquire a knowledge of a branch of their profession which they had hitherto much neglected.’

He was then asked:—

‘Have you in the course of your service found that a want on the part of executive officers of a practical acquaintance with navigation has resulted disadvantageously for ships on expeditions?’—‘Yes; I was first struck with it in the Arctic service, where I felt my own shortcomings, and I remarked to what a lamentable extent it existed, even among a picked body of officers that were sent out on two expeditions to those seas.’

The scheme which I would propose is this—1. Gradually to abolish the navigating class, making ample compensation in doing so. 2. Make all your captains, as soon as qualified, the actual navigators of their ships, absolutely responsible, giving them a lieutenant to assist them. In carrying this out I would venture to suggest that—1. Captains should be given (say) 100*l.* a-year extra pay for the additional work. 2. Lieutenants’ list increased by 150. 3. An extra lieutenant be appointed in all the large ships. 4. All lieutenants, after having served two years as officers of the watch, should be made to pass an examination similar in all respects to that which the navigating lieutenants now go through, in pilotage and practical navigation, and according to the examination passed so they should have preference in being selected to assist the captain, giving a small increase of pay. 5. Commanders, during the first two years after their promotion, should be made to go through a course of pilotage and practical navigation in the Channel in two vessels to be specially appointed for that duty; and, in order to give proper inducement to officers to qualify, I would give to those who came up to a certain standard full pay, and sea time, and so on in

proportion to their merit. 6. No lieutenant should be allowed to hold the duty of assistant navigating officer to the captain longer than five years. 7. In every ship, without exception, there should always be a survey in progress, so that all officers might have the opportunity of acquiring an intimate knowledge of surveying. There may be many other plans which might be suggested, and I offer these with considerable diffidence; but, at the same time, after considering the matter very carefully, I believe this would answer the purpose and give complete satisfaction. As to expense, the present system costs 125,000*l.* a-year, while the plan I suggest, including extra pay to captains, would cost only about 90,000*l.*

Objections
to abolition
of navi-
gating
branch.

Now, Sir, what are the main objections which are urged to this plan? I am well aware that it will be stated that it would be impossible to give the captain the additional burden. My strong belief is, that with a competent assistant, it would really give a captain less anxiety, and therefore less work, as he would have thorough confidence in himself, whereas now he seldom feels it. If captains have too much correspondence, by all means curtail it. If the captain of every other foreign navy in the world is able to do this work, surely the argument falls to the ground. Then, secondly, I know I shall be told that it is quite true that foreign navies have no such separate grades; but their vessels are not navigated with the same boldness as ours, and that French officers are continually praising our system. Sir, I should be very sorry, indeed, if any change were effected which would militate against our ships being navigated with the utmost boldness consistent with safety. Undoubtedly every consideration must be subsidiary to this one point; and it is only because I believe that ships would be navigated with far greater boldness, and with far greater security, if the captains had practical acquaintance with these duties and felt themselves thoroughly responsible, that I thought it my duty to bring this motion forward. As regards the opinion of foreign officers I am quite certain that amongst thoughtful and working officers a feeling of the opposite nature is prevalent. Admiral Sullivan gave strong testimony on this point. He was asked:—

‘Have you been informed by French officers that they lament that they have not got the rank of master, as we have?’—‘Never; I believe that I have served more with French officers and with French ships than any man in our service. I am the only officer in our service, I believe, who has lived in them, has piloted them, and been in charge of them. I had upon one occasion nine or ten months’ daily experience with them, and doing piloting and surveying work

for them in consequence of their not having any surveying officers, just the same as I have done for our own squadron or fleet, and in no case do I ever recollect them lamenting the want of masters ; but they have frequently expressed to me their regret that they had not a class of surveying officers as we had ; therefore, they have felt the want of that very class that I have alluded to ; but I never heard them say that they were in want of officers for the ordinary pilotage or navigation of their fleet.'

Then Sir Spencer Robinson was asked :—

'Have you had any opportunities of hearing the opinion of superior French officers with regard to their navigating system as compared with ours ?'—'Yes ; I have spoken to many French naval officers, who thought it a very excellent thing to have a master, and on talking to them about it, I found that the general view of the greater part of them was a desire to discharge themselves from that labour and responsibility. That motive, of course, ought not to influence any officer, and therefore I do not consider that opinion of any great value.'

Sir
Spencer
Robinson.

Surely, Sir, however, there is one satisfactory answer which cannot be got over—namely, that if our system was really considered so very satisfactory it would very soon be introduced into not only the French but every other foreign navy. The very reverse is, however, the case ; and in the Russian Navy, where a similar system is now in force, I understand that it is intended to abolish it. In the German Navy, whilst copying every other institution, they have most carefully avoided this. Then, Sir, I shall probably be told that if this navigating class is abolished you will deprive many naval officers of the boon they now have of getting their sons into the Navy which they could not afford to do as naval cadets ; but surely, Sir, this may be an argument in favour of giving scholarships or of increasing the pay of cadets, but certainly is no reason in favour of retaining a bad system of navigating your ships. I may be told that five years is too short a time for lieutenants to act as assistant navigators ; but it must be remembered my fundamental principle is that they shall only be assistants to the captains, who are themselves to be the thoroughly experienced navigators and pilots. I will not detain the House any longer, Sir ; but before I sit down I am anxious to say that I hope my hon. and gallant friends who sit in this House, and who, I understand, are nearly all opposed to my motion, will not think it presumption on my part to have raised this question, having only been a lieutenant in the Navy when I left the service. I assure them I have done so in all humility, being well aware of the

General
argument
for abolition
of
navigating
line.

great advantages which are supposed to meet; but I have felt the like objection to be answered, and having a very strong opinion on the subject, I do not think I should be justified in not expressing it.

Change
to be
made
in the
composition
of the
Navy.

I will only further add that on no former occasion have you ever had such an opportunity to make this alteration. You have a large number of volunteers ready to increase your *Reem-mant les*. You have a great scheme of naval education which you are about to set on foot, which you have the evidence of all your naval professors and the complete until this change is effected. The late disasters have drawn the eyes of all foreign navies upon us, and our navigation, if repeated, cannot fail to become a scandal. The whole world is looking forward to the change—sooner or later it must come. Clinging to a system of more than two centuries old, and not in harmony with the age, will not avail us in time of need. I entreat my right hon. friend to make the alteration soon, before he has a fresh roll of disasters to mar still further the prestige of the British Navy. I beg to move:—

‘That, in the opinion of this House, the time has arrived when the maintenance of a separate and distinct branch of officers for navigating duties is no longer desirable in the interests of the naval service.’

The Com-
mittee.

MR. BRAYLEY: Sir, I rise for the purpose of seconding the motion of my hon. friend, with an intimate conviction that the change which he has advocated will prove beneficial to our naval service. It would, indeed, be presumptuous in a civilian to entertain a view on a subject so strictly professional, which was not based on the clearly-expressed opinions of naval officers of high reputation. That this essential foundation is not wanting in the present instance, will be clearly demonstrated by reference to the most recent Parliamentary literature on the subject. The evidence taken by the Committee on the Education of Naval Officers comprised much weighty testimony in favour of the abolition of a special class of officers for navigating duties. The change was advocated by Admiral Cooper Key, as an inducement to officers to study; and the Committee in their report gave it as their opinion that, in a purely educational point of view, the employment of volunteers from the executive branch, for the performance of navigating duties, would tend materially to improve the general knowledge of navigation and pilotage among the officers.

Evidence of
Naval In-
struction.

To show how valuable the abolition of the special class of navigating officers may be as an incentive to the general study of navigation and pilotage in the Navy, I will quote from the evidence of the naval instructors—gentlemen who possess unique opportuni-

ties of judging whether we may safely rely on selected officers of the executive branch for the effective performance of navigating duties in the Navy. Professor Main has well explained the distinction between encouragement to study by the hope of reward, and the attempt to enforce a high standard in compulsory examinations. In his memorandum, presented to the Committee on Naval Education, he says:—

‘All compulsory education should end with the examination for sub-lieutenant. It should be the province of the Admiralty from this point to stimulate talent and zeal in special branches, by creating special classes of officers. This has been already most successfully done in the case of the gunnery lieutenants. If it be thought desirable to do away with the navigating officers, as a distinct class, it will be attended with the greatest benefit to naval education generally. The increase of pay for performing these duties should be such as to afford a sufficient inducement to volunteer for the appointment; and it should be always looked on as a stepping-stone to promotion, and as a claim for employment, I have no doubt this would give an opening for many young officers, who have a natural liking for astronomical work, and at present have no useful way of employing themselves in it.’

Professor
Main.

The evidence given by Mr. Harbord was to the same effect.

Mr. Har-
bord.

‘Under the present system,’ he said, ‘you enter a number of youths of inferior education, and they must be transformed into accomplished navigators, in many cases in spite of their natural taste being adverse to their calling, while for many midshipmen with a natural leaning to the science there is no opening. With the exception of the boys from Greenwich, I have as a rule found the masters’ assistants inferior to the midshipmen; and I am sure that the navigation of our ships would be in safer hands, if the officers in charge of this department were chosen from the whole body of young officers, especially from those who prove themselves good seamen as well as navigators.’

Another naval instructor, Mr. Buckley, of the ‘Duke of Wellington,’ and formerly instructor of navigating cadets in the ‘St. George,’ gave the following answers to the following questions:— ‘Did any among the navigating cadets passed out of the “St. George” give promise of being first-rate navigating officers?’— ‘Certainly,’ he replied. ‘Many?’ was the next question. The answer was—‘About a quarter of the number.’ He was then asked:—‘Do you think that the other three-quarters would be either indifferent or bad navigating officers?’ He replied—‘I think so.’ He

Mr. Buck-
ley.

Captain
Powell.

was then asked—‘Whether he thought that, if the navigating officers were chosen from the lieutenants generally, and if they qualified themselves specially, that you would get upon the whole a better class than those you were likely to have under the present system?’ His reply was—‘Certainly you would.’ Captain Powell, who had formerly commanded the ‘*Britannia*,’ abundantly confirmed the opinion of the instructors. He recommended that the navigating duties should be performed by lieutenants, and he predicted that by this means you would often have officers in command of singular ability in manœuvring and navigating ships.

Sir Cooper
Key.

It has been stated repeatedly by those naval officers of the executive branch who have given their attention to navigation, that the notion that there is some insuperable difficulty in mastering the science is an illusion. Admiral Cooper Key told the Committee on Education that he did not think that the practice of navigation was so very difficult as to require a life-time to get a thorough knowledge of it. Some of the best navigators he had ever known were quite young men. Again, alluding to the practice of pilotage, as distinguished from navigation. Admiral Cooper Key declared that wherever he had served—in any part of the globe—the best pilots he had come across, and the best pilots we have had in our service, have not been navigating officers, although, as a class, they are admirable.

Mr. W. S.
Lindsay.

From these forcible arguments of a naval officer, I turn to a distinguished authority connected with the mercantile marine, Mr. W. S. Lindsay, and I ask the attention of the House to the view which he has expressed on this subject, in his memorandum presented to Parliament in 1870:—

‘In my remarks on manning the Navy, appended to the report of the Commission of 1859, of which I had the honour to be a member, I recommended that the grade of master should be altogether abolished. I did so, because I thought that the most essential part of a seaman’s duty, the navigation of his ship, should be thoroughly understood by every officer before he was placed in command; and I thought that the best way to accomplish this desirable object would be to have a navigating lieutenant to assist the captain in the navigation of his ship. The captain should alone be held responsible for accidents through improper navigation. The ten years which have since elapsed, while they have changed my opinion on some other of my recommendations, have only tended to confirm what I then said in regard to masters in the Navy.’

A commentary on Mr. W. S. Lindsay’s paper, by Admiral Sullivan,

was laid before Parliament at the same time with his memorandum. In that commentary many of Mr. W. S. Lindsay's suggestions were freely criticised, but in the abolition of the master class the gallant admiral thoroughly concurred.

Sir Bartholomew Sullivan.

'This is,' he says, 'the most important point to be considered, if we look to the real advantage to the service and the thorough efficiency of the officers in command of our ships. I have, throughout my service in the Navy, seen so much of the evils resulting from our present system, and have so often felt ashamed of the ignorance of officers in command, of some of the most important duties of their positions, that I advocated the abolition of the class as far back as 1846.'

Again, 'I went fully into the question with Sir John Pakington, when he first went to the Admiralty, and he asked a young commander, to whom he offered a ship, if he had any objection to take a young sub-lieutenant in lieu of a master, and take charge of the navigation and pilotage himself. "If I could not do that, Sir, I should not be fit to command her," was the reply. I believe he served his commission without a master or second-mate, and I am quite sure that if this had been followed up and made the rule, we should have all our young commanders far more efficient for command, in every respect, than many of them are under the present system.'

These opinions ought to satisfy the most doubtful minds as to the possibility of obtaining competent navigating officers from the executive branch. If that be so, the other arguments in favour of the abolition of a special class of navigating officers deserve the most favourable consideration. The tendency of our present system must inevitably be to divert the attention of the executive officers of the Navy from the study of navigation and pilotage. If this branch of duty were no longer reserved for a special class, we should not, says Admiral Sullivan, see such a disgraceful occurrence as a commander of a sloop at Spithead—otherwise a good officer and sailor—refusing to obey a signal to proceed to the assistance of a ship on shore outside the Isle of Wight, and twice repeating the signal of inability to weigh, because the master was on shore. Again, to quote from a pamphlet recently published by a staff-commander in the Navy:—

Existence of special line discourages executive officers from study of navigation.

'A certain flag-ship was recently required to proceed from Portland to Portsmouth; but she had no master. The Admiralty telegraphed that the navigating officer of the ship remaining behind was to be sent on board. With a captain, a commander, and six lieutenants, does not this appear lamentable? Can the system be

correct, if the absence of one man reduces a ship to a comparative state of inefficiency ?'

The present system seems, in the highest degree, anomalous. Admirals and captains are held responsible for disaster, if any should occur, from improper navigation, and are liable to suffer the most severe penalties which can be imposed on officers in the Navy ; yet, from the time when they pass their examination as lieutenants, until they actually hold a command, they have but little, if any, opportunity of acquiring a practical knowledge of an art, proficiency in which can only be attained by practical training.

Knowledge
of pilotage
essential
to a naval
com-
mander.

It is quite impossible to understand how an officer can effectually conduct a naval operation without being well acquainted with navigation and pilotage. Lord Nelson, in his interesting autobiography, written on board his flag-ship, in Port Mahon, in 1799, twice alludes to the opportunities which he had enjoyed, and of which he had eagerly availed himself, to become acquainted with the art of pilotage, as having been of much service to him in his subsequent career. In the first passage, speaking of the year 1772, when he was only 14 years of age, he says that, when on board the 'Triumph,' at Chatham,—

'As his ambition was to be a seaman, it was always held out as a reward that, if he attended well to his navigation, he should go in the cutter and decked longboat which was attached to the commanding officer's ship at Chatham.'

Thus by degrees he became a good pilot for vessels of that description from Chatham to the Tower of London, down the Swin and the North Foreland, and confident of himself amongst rocks and shoals, which had many times since been of great comfort to him. Again, somewhat later in his career, Lord Nelson says that when he was second lieutenant of the 'Lowestoffe' frigate of 32 guns he went to Jamaica.

'But even a frigate,' he says, 'was not sufficiently active for my mind, and I got into a schooner, tender to the "Lowestoffe." In this vessel I made myself a complete pilot for all the passages through the Keys Islands, situated on the north side of Hispaniola.'

Small
vessels
should be
commis-
sioned for
instruction
in pilotage.

These passages from the autobiography of Lord Nelson appear to me to suggest the importance to the naval profession not merely of a knowledge of navigation and pilotage generally, but especially of an acquaintance with our own coasts, the navigation of which is in some parts exceptionally difficult. The Channel Fleet, so called, is too little seen in the Channel, and rarely appears on the East coast, in the St. George's Channel, or in Scotland. But even if the Channel

Fleet were to remain more constantly at home, it would not be possible for our young officers to study the intricate navigation of the estuaries of the Thames, the Mersey, or the Humber, in vessels of the prodigious dimensions of our modern ironclads. For this purpose smaller vessels should be commissioned, more capable of being handled under sail, and able from their moderate draught to enter many ports which our large ironclads cannot visit. I believe that the reserves of seamen in our home ports are at the present time sufficiently large to provide crews for the vessels commissioned for the relief of ships on foreign stations, and also to man, at least in the summer season, a few small corvettes and sloops, which would afford to the officers appointed to serve in them opportunities of becoming acquainted with our home waters. We have not a single vessel in commission on the home station which can be regarded as an available cruising vessel for the instruction of officers in the entire pilotage of the English coast; and when we take into view the increasing number and enormously increasing value of Her Majesty's ships, designed especially for coast defence, the necessity of giving to naval officers more opportunity of becoming familiar with our home waters will be generally recognised.

In the United States Navy, the importance of instructing officers, in the earlier stages of their career, in sailing ships has been fully recognised. Attached to the establishment at Annapolis, there are three sea-going cruisers—a frigate and two corvettes—all without steam, which make voyages in the summer months.

I will not enlarge on one of the objections to the special class of officers for navigating duties—I mean the social difficulty. In spite of many changes and concessions of higher nominal rank to masters, this difficulty still remains and will ever continue, so long as they are retained as a distinct class in the service. A stronger sentiment of jealousy of all class privileges prevails at the present time than was evinced sixty years ago. The pathetic appeals of Sir Charles Napier are not yet forgotten in this House, in which he described the discouragement of the neglected and unknown men in the subordinate ranks of the Navy, with no friends at court. If such disappointment were felt by one class of officers, is it not fair to presume that it is as strongly felt by the other?

The social aspect of the question.

But my desire is not simply to satisfy the aspirations of the present class of navigating officers. If that were all, a concession of full participation in the chances of promotion would be enough. I desire to see the class abolished altogether, and their duties performed by selected and duly-qualified officers of the executive

Abolition of navigating line recommended.

branch. I am convinced by the arguments of those distinguished naval men who affirm that the present system tends to check the acquisition of the knowledge and experience of navigation which all officers ought to possess. These younger officers are on their way to high commands, in which they will be responsible for the safety of the immensely valuable ships which our armoured fleet now contains.

Younger
officers
favourable.

Navigation requires close attention; and the time of the navigating officers appointed to the staff for those special duties will always be fully employed when at sea. But there is no difficulty, either theoretical or practical, in the art of navigation, in comparison with the acquirement of the technical knowledge necessary in any other profession. In conclusion, I may add that while the majority of the senior officers of the Navy are opposed to the abolition of the master class, the majority of the younger officers of the Navy are, so far as I have been able to ascertain, in favour of the change. I am therefore confident that sooner or later an alteration of system, so desirable for the improvement of the service, will be carried out. Meanwhile, I trust that the First Lord of the Admiralty may be able to hold out hopes of an early movement in this direction.

Committee
of 1862.

The recommendations of the Committee of 1862 in favour of a trial of lieutenants of the executive line was, there is reason to believe, cordially welcomed by the then Board of Admiralty; and in moving the Navy Estimates of 1866, Lord Clarence Paget stated that, while ever desirous of improving the condition of the masters, the conclusion at which they had arrived was that it would be better to let the class die out. 'We propose,' he said, 'to appoint lieutenants who would do the work quite as well as the masters.' The Committee of 1862 recommended that, as an experiment, ten lieutenants should be appointed in ten of the smaller vessels to take charge of the navigation. Let the Admiralty adopt this suggestion. Let an additional lieutenant be appointed, instead of a master, to the first ten corvettes, commanded by officers who will gladly accept them as substitutes for the navigating officers, and let the merits of the new system be tested by results. I am convinced that the result will be favourable; but as many officers, whose opinions deserve the most attentive consideration, object to a change, in deference to them it would be prudent to wait until we have acquired experience of the new system before we do away with the old. Whatever the issue of the controversy may be, the House will appreciate the importance of securing the highest attainable perfection in the navigation of the costly vessels of our modern Navy, and will examine with interest a proposal designed to improve a system which has acknowledged defects.

SPEECHES ON MOVING AND SECONDING A RESOLUTION ON THE NAVIGATION OF
HER MAJESTY'S SHIPS,

*By Lord Sudeley and the Compiler; delivered in the House of
Commons, Tuesday, April 25, 1876.*

(Extracted from Hansard's 'Parliamentary Debates.')

Mr. HANBURY-TRACY, in rising to call attention to the alteration which is gradually being effected in the system under which Her Majesty's ships are navigated; and to move:—

Lord
Sudeley.

'That, in the opinion of this House, it having been determined gradually to abolish the system of employing a separate and distinct branch of officers for navigating duties, it is desirable that greater encouragement and a more extended training than at present adopted should be given to the officers of the fleet to obtain practical experience in surveying, pilotage, and navigation; and that in carrying out the intended change due regard should be paid to the position and prospects of existing class of navigating officers,' said:—The subject cannot fail to be somewhat dry and uninteresting, as it is purely a professional matter; but, at the same time, when it is remembered how large an amount we spend annually on our iron-clad Navy, I trust I may claim the kind indulgence of the House whilst I endeavour to state the case as briefly as possible. When I last brought this subject before the House the question then in dispute was whether the old system of retaining a separate class for navigating duties should be continued, or whether it should be relegated to the main executive branch and a general knowledge diffused throughout all branches of the service. Since then I am happy to say this point has practically been conceded, and I do not propose to re-open it. To render the existing state of things intelligible to the House I ought perhaps to explain that for a number of years we have maintained a separate branch, and I ought to use the expression a separate

History of
the navigating
branch.

class of officers for navigating duties, under the general idea that by this means we obtained men with far greater experience as pilots and navigators than we otherwise could. This system originated many years ago, in the time of Henry VIII., when it was necessary to have sea nurses for our captains, and was resuscitated at the beginning of the old French War, when it was found necessary to expand our fleet very largely; we then brought in a large number of old trained mates and merchant captains from the merchant navy, and as they had not been brought up trained in gunnery and the discipline of a man-of-war we utilised their services by entrusting them with the navigation of the ships. These officers were first-rate seamen, and in most cases good pilots, and were well satisfied with their position, which was subordinate to the executive officers of the ship. As these men died out the Navy had got so accustomed to lean on the old masters that instead of rearing up the pick of our young lieutenants to take their place we unfortunately allowed the distinct and subordinate class to exist, and we entered year after year a mixed set of lads, many of whom were of a very inferior social status, to become our special navigators, without any selection or special qualification. Of late years a much better class of boys were entered, who, as they grew up, felt their anomalous and subordinate position most acutely. The general result was, as might be expected, pilotage and navigation got to be regarded as a secondary consideration, the executive class looked down upon it and took little or no heed of it; whilst, at the same time, the special navigating class grew more and more discontented. At last matters arrived at such a point that the question could no longer be disregarded. In 1865 the Duke of Somerset, after carefully considering the question with the assistance of the right hon. gentleman the member for Pontefract (Mr. Childers), determined that the only real solution of the difficulty was gradually to let the old class die out and to rear up officers to take their place from the main line. Thus, to obtain selection and special qualification whilst, at the same time, diffusing the knowledge through all ranks of the service. This policy was announced by Lord Clarence Paget in June, 1865. Unfortunately before this policy could be fully carried out the Duke of Somerset went out of office and was succeeded by the right hon. gentleman the member for Droitwich (Sir John Pakington), now Lord Hampton, who at once proceeded to reverse this policy and to enter again a large number of navigating cadets. I am told, on high authority, that this reversal of policy was not so much due to any very strong opinion on the merits of the question as it was to the fact that the

right hon. gentleman desired to bestow his patronage on a considerable number of lads who were over the age of naval cadets, and by this means they were got into the service. Whether this was so or not must remain a secret in the archives of the Admiralty ; but the fact is undoubtedly true that the policy was reversed, and an attempt was made to bolster up the old navigating class. The right hon. gentleman the member for Tyrone (the late Mr. Corry), who succeeded Lord Hampton, continued in the same course. In 1870 the right hon. gentleman the member for Pontefract, on becoming First Lord, determined that amongst the many reforms he would carry out, the abolition of a separate class for navigating duties should be one of them. He at once placed the entry of navigating cadets on the same footing as the other cadets. The enormous amount of work which was then thrust upon him, and his subsequent illness, prevented further steps being then taken. Although my motion was opposed in 1872 by the right hon. gentleman the member for the City of London (Mr. Goschen), I am happy to say that within one year the long-delayed step was taken, and a circular was issued in August, 1873, inviting five lieutenants and twenty sub-lieutenants to volunteer for navigating duties ; whilst at the same time it was made clear that the old class were gradually to be allowed to die out. I confess that when the present Government came into office I was much afraid that they might again take a retrograde step. I am thankful, however, to say that the right hon. gentleman the present First Lord has been able to withstand all inducements, and has not only adhered to the policy of his predecessor, but has taken another step in a similar direction. If there were any doubts as to his intention in this respect, they were removed by the announcement he made a few weeks ago, that he proposed at once to amalgamate the navigating midshipmen with the executive line. Starting, then, from this point, let us see whether the policy is being carried out as vigorously as it ought to be, and in a manner likely to render the new system a success. The question appears to divide itself into three subjects—First : Whether the alteration which has been made will speedily diffuse a knowledge of practical navigation and pilotage amongst our captains and commanders, and enable them to handle their ships with greater confidence ? Secondly : Whether the officers being trained up to navigating duties in the executive line, to assist the captain, have facilities given them to enable them to become thoroughly experienced and efficient in their duties ? Thirdly : Whether proper steps have been taken to meet the grievances complained of by the existing navigating class, and to effect a just settlement of the

whole question? And now let us examine the first part of the subject.

Abolition
of navi-
gating
line will
encourage
executive
branch to
study
pilotage.

The main advantage to be gained from the abolition of a separate branch undoubtedly is the diffusion of a greater amount of practical navigation and pilotage amongst our executive officers; and it is of the greatest importance that our captains and commanders should obtain this knowledge at the earliest possible moment. It is with this view I and many others have always urged forward this question, and we are therefore most anxious, now that the general system is agreed to, that no time should be lost in obtaining this result. The grievances of the navigating class, whilst most important, must nevertheless stand second to the primary consideration. Captain Washington, a late Hydrographer of the Admiralty, stated these views very clearly in an able memorandum in 1862. He then said:—

‘But apart from rendering justice to masters, it appears to me that there is a higher motive for doing away with the class—namely, the general benefit of the service, by breaking up the monopoly of a large share of professional knowledge, reserved apparently for one branch, and that not the principal executive branch of the service. The master, by the Admiralty instructions, is entrusted with the care of the rigging, and expenditure of stores, the stowage of the holds, the charge of the anchors and cables, the custody of chronometers and compasses, the navigation of the ship on the ocean, the pilotage in narrow waters, and the steering and conning of the ship in time of battle. My great desire would be to see the knowledge, experience, and skill which may be obtained in the performance of such duties absorbed among the lieutenants, commanders, and captains, all of whom would become more efficient in their respective positions by the addition to their professional qualifications, which would be the sure and certain result of abolishing the separate class.’

I am well aware that there are many officers in command of ships who are good navigators and pilots, and I know several captains, who, although they may have neglected this duty during the greater part of their service, have found the responsibility so serious when they became captains, that they have at once set to work to render themselves thoroughly competent. It is, however, only too true that as a general rule, owing to the severance of the navigating duties from the main body of the profession, lieutenants, after having passed at the college, throw their books aside and think no more of astronomy, or the theory of navigation—in which, in many

cases, they have passed brilliant examinations—knowing very well that owing to there being a distinct class for these duties their knowledge will never be required. The result is, that lieutenants become commanders and commanders become captains without, in nine cases out of ten, ever having taken a moderate sized ship from one port to another by themselves. It is true that formal observation and a few ‘days’ work’ are occasionally required in some ships; but there is no reality in it; there is no responsibility about it. I remember, in 1872, the right hon. and gallant gentleman the member for Stamford (Sir John Hay), in replying to me, stating that it was new to him that captains did not know how to navigate and pilot their vessels, and he seemed to imply that I had very much exaggerated the case. Now, Sir, I can well understand the right hon. and gallant gentleman’s feelings in the matter. He happened himself to be one of those captains who took an interest in this part of that duty, and it is well known that in one or two ships he had no navigating officer on board, and the ships were navigated with great success. He was well known in the service to be a very good officer, and I have no doubt in most matters he was thoroughly competent. To show, Sir, however, that I am borne out in the opinion I have expressed by others, I will, with the permission of the House, read a letter by a staff-commander of considerable standing, one out of many sent to me:—

‘Speaking as a navigating officer, and feeling acutely the injustice under which we suffer, I am nevertheless convinced that this is nothing compared to the wrong done to the service and to the country by the continuance of the present system under which the practical knowledge of navigation is confined to a mere handful, when the whole executive class is only waiting for proper inducements to qualify for, and undertake, this first and most important of a naval officer’s duty. . . . It is often said, both in and out of Parliament, that captains can and do navigate their own ships. I have had nineteen years’ experience in navigating in charge of all classes of ships from a gunboat to the largest ironclads, and have served under nearly a score of captains, and this is my experience of their knowledge and practice of navigation. Of the whole number only one took astronomical observations with any regularity, another did so occasionally; and of the remainder, I never saw one take a sextant in hand, whilst as to deviation and variation of the compass, &c., &c., such things were merely details of the navigating officer’s duty with which they did not concern themselves, and of which they mostly knew nothing; yet the majority were really good officers,

but had simply paid no attention to a duty which the service had brought them up to think would be done for them. . . . The position of navigating officers is so depressing that it is no wonder executive officers are not very anxious to adopt their line, and the neglect of that duty very naturally leads to the neglect of the handling of the ship under other circumstances ; so that I have seen the Channel Fleet of nine ironclads practically in the hands of the staff-commanders when performing steam evolutions, the flagship and one other being the only ships where the captains took charge of their own ships. Lately some improvement has taken place in this respect ; but still the chief knowledge and practice of handling the ship lies with the navigating officer, and what I dread is this—that in case of an engagement between two fleets a high-spirited captain would possibly feel himself bound, when about to ram an enemy, to take the direction of the helm out of the navigating officer's hands ; when it is not too much to say that in three cases out of four proficiency would be giving way to inefficiency, and failure would be the result. The only way out of the difficulty is to abolish the present class of navigating officers, and diffuse their knowledge throughout the executives ; but do us justice in their abolition.'

I think no one can deny that this letter gives a very decided opinion. The name of the writer of this letter I shall be very happy to give to any hon. member, and the officer has given me permission to give his name to the Admiralty if they require it, or wish to test the accuracy of his statement. He is a distinguished and able officer, and speaks with considerable authority. Sir, in the present day, with the great alterations in naval warfare, I maintain it is incumbent on our captains that they shall no longer be dependent on a navigating officer. The old days when the master sailed and conned the ship into action are past. We have arrived at a time when rams and torpedoes will be the deadly weapons of the future, and when the captain who handles his ram the most skilfully must win the day. It is difficult to picture to oneself a more unpleasant position for a captain to be placed in than to have command of one of our great ironclad rams, and to have to leave the handling of his ship to another officer. Captain Noel, in his prize essay, states the necessity of careful handling of a ram so well that I feel I cannot do better than quote his words:—

• What iron nerves, what cool-headed determination, what almost instinctive guidance will be required to steer one of our largest ironclads, moving at the rate of eight or ten knots, against one of

another fleet approaching at the same rate, with the firm resolution of ramming her should opportunity offer! There will be no prompting, no time to ask advice, no opportunity for further calculation than the eye and senses can command at the moment; the decision must be instantaneous, and immediately carried into effect, the only encouragement being in the knowledge that the enemy's ship is commanded and guided by a man undergoing the same fearful test, and that the most determined man of the two, if sufficiently skilful, must secure his object.'

I know the old worn-out argument that the captain has so much to do in a man-of-war of the present date, that she is such a complex machine that it is impossible for him to attend to the navigation of the ship. My answer is simply this—that I should be the last to desire that he should have the whole of the detail work of navigation and piloting thrown on his shoulders, and that he must have as his assistant the most qualified man it is possible to obtain; but I maintain it is one of the first qualifications of a seaman and a captain that he should have thorough acquaintance with the handling of his vessel, and a practical acquaintance with navigation and piloting, so as when necessary to take charge himself, and to have confidence in himself as he has in every other of his duties. In order to give this practical knowledge to our captains, I am convinced that you must take additional steps to those now in force. Do not let us forget that until our new system has had time to develop itself we shall remain the only Navy in the world in which pilotage, navigation, and the handling of his vessel, are not considered the most essential duties of every captain. In Germany they have copied every other institution, but they have taken great care to make all their captains serve an apprenticeship in navigating their ship. By the system inaugurated by the right hon. gentleman the member for the City of London (Mr. Goschen) you have obtained four lieutenants and twenty-three sub-lieutenants who have qualified; and assuming that the Admiralty select annually some fifteen or twenty for these navigating duties, you will in the course of fifteen years have several of your captains officers who have been navigating officers, and you will gradually arrive at the proportion of one-fifth of your captains being experienced navigators. But, Sir, I apprehend we cannot wait fifteen years, and the problem seems to be what steps can you take to infuse an immediate acquaintance with these duties? With the certainty that rams will be very largely used in any great naval war, the handling of our ships will form a most important part of the chances of success. I fear

Pilotage
essential
to a cap-
tain.

that unless some great alteration is made, some fearful catastrophe will one day occur, and with ironclads costing over 500,000*l.* the Admiralty incur a fearful responsibility if they allow the present want of practice to continue. It is fourteen years since Captain Washington warned the Admiralty of the danger they would be placed in, and yet no change had been made. His remarkable words, read now, after this lapse of time, are curiously prophetic:—

‘It is not impossible that the introduction of armour-plated ships and steam rams may have an important bearing on this question. If a steam ram were about to give her stem to an opponent, is it conceivable that the captain of the ram should delegate his authority to a master at that critical moment? Would he not rather, at all hazards, be bound to take the responsibility on himself? If this be so, should he not have a training for handling and steering his ship promptly under any emergency? Would he not feel far more confidence in himself had he passed through the grades of navigating officer, and had for some years had charge of the steering and conning of the ship? Very recent events point to this mode of warfare as likely to play a prominent part in any future naval action; and would it be wise, then, to wait until the time of need before training our younger executive officers to acquire that self-reliance and confidence which can only be gained by continual practice?’

School of
pilotage
should be
estab-
lished.

The remedy I would venture to suggest for this state of things appears to me very simple. You have torpedo schools, you have gunnery schools; why not at once institute a school for practical navigation and pilotage and allow your officers to go through a course? It is no abstruse science, but one easily learnt—only requiring practice. There would be no difficulty whatever in getting your captains and commanders to go through it voluntarily. We have thirty-nine captains who have not yet been appointed to a ship since their promotion, and unfortunately it is still four and a-half years before a man obtains a command. It is the greatest blot in the profession that this should be so. Officers in the prime of life, with a full knowledge of their profession, are condemned to hopeless inactivity for four long years on a miserable pittance called half-pay. In these days, when even one year makes a vast difference in our knowledge of naval architecture and science of naval warfare, it is suicidal to keep the officers—so much depends upon rusting—in some inland village. Surely every endeavour and every inducement ought to be held out to them, not only to keep up their knowledge, but to increase their attainments. If you cannot give them ships, attach them to dockyards, to committees, give them the opportunity

of studying at college and in the various schools. If you were to offer full-pay and harbour-service time to officers passing a certain standard for, say, six months' course, you would have nearly all the captains coming forward; and if, in addition to this, you were to make it generally known that a good examination would be a stepping stone to a command, all difficulty would be removed, and you would soon have captains possessing thorough confidence in themselves as practical navigators. In creating a school such as I have suggested, it would be necessary to have two or three steamers attached for practical pilotage in the Channel. To carry out the same object in other grades, I would also suggest that no lieutenant should be promoted to commander until he had passed through this practical course. As regards the second part of the subject, whether the young lieutenants and sub-lieutenants who are being trained to navigating duties have facilities given them to enable them to become thoroughly experienced and efficient, I have not much to say. As far as I can judge from inquiries, those who have come forward and been selected are likely to prove valuable officers. The same suggestion which I have made as regards captains, I would also apply to these officers, and that they should obtain their knowledge of pilotage from actual experience in the Channel, and not, as at present, obtain their practical knowledge after they have passed. It is another proof how little is thought of pilotage and navigation, that although a strong recommendation was made, as long ago as 1862, by the committee which sat on the subject, that steamers should be set apart to teach officers training for pilotage duties the practical part of their duties, no attempt whatever has been made to carry it out. The report states:—

A steamer should be employed for instruction in pilotage.

‘A thorough knowledge of the pilotage of the Channel and of the coasts of the British Isles is at all times desirable, and in the event of a war might be of vital importance to the country. We therefore recommend that at least one vessel should be appropriated for this service, and that before staff-lieutenants are confirmed in that rank they should serve not less than three months in that or some other vessel in the Channel and around the coasts of the United Kingdom.’

It can hardly be credited that navigating officers pass their examination in pilotage at the Admiralty without any such assistance, and take charge of navigating and pilot duties without having had any experience of the different harbours. There are many plans, in addition to this, which might be thought of. We have a large number of revenue cruisers round our coasts, which might all be commanded by lieutenants, and four or five sub-lieutenants attached

to each, so as to acquire an intimate acquaintance with our various harbours. Then, Sir, why should not our young officers attach themselves to pilot boats to acquire experience? If some such steps are taken, I have every confidence that the lieutenants and sub-lieutenants now coming forward will prove experienced pilots and able navigators. The Admiralty have the pick of the whole profession, and ought therefore to have no difficulty in rearing up well-qualified officers.

The surveying service should be increased.

There is one school for our officers in these duties and also in seamanship which I fear has been much neglected, I mean the surveying school. It is only necessary to go back a very few years to see how many officers of the main executive branch were employed on surveying service in comparison to the number now. I believe every naval officer will agree with me that the surveying service ought to be well kept up; not only for the great national advantages we derive from careful surveys, enabling our merchant fleets to be safely guided in difficult channels, but from the splendid school it which affords for training our surveyors, navigators, and pilots. In time of war when buoys are taken up, and charts of little use, the men who have been trained in distant surveys are invaluable. It is these men who, in all our wars, have conducted our fleet in safety in difficult channels, and seem to have acquired a natural power of smelling out rocks and shoals. I regret to find that the number of our *bouâ-fide* surveyors has of late years much dwindled down. There were—captains and commanders—in 1849, 28; in 1855, 24; in 1865, 18; in 1876, only 4. It is perfectly true that several lieutenants have lately been brought into this service, and will eventually become *bouâ-fide* surveyors. I am also aware that the surveying requirements in one respect are not so great as they used to be, owing to several foreign nations having come forward to take their share in the work; but, as a school for the Navy, the requirements are even greater than ever. In 1849 we had 12 surveying ships in commission; in 1875 we had only three, showing a great reduction.

Navigating officers should give instruction in navigation.

In addition to these modes of training our officers, the Admiralty ought to enforce the suggestion made, I think, by Admiral Ryder, that as the gunnery lieutenants instruct officers in gunnery, so the navigating officers should instruct them in practical surveying, navigation, pilotage, and meteorology, and thus enable them to make useful surveys of reefs, running surveys of coast lines and harbours; that in every ship, unless good reason could be shown to the contrary, a survey for exercise and experience should always

be on hand in every ship. By these means you would very soon diffuse a general knowledge, and you would raise these important duties to the primary position they ought to hold in the mind of every seaman.

I now come to the third and last portion of my subject—namely, the grievances of navigating officers. Although I treat this last, it is a most important matter and cannot be neglected. Your navigating officers have for years been in a most anomalous and subordinate position, galling to every man of any spirit, and in many cases almost unbearable. They have, notwithstanding this, done their work very well, and I apprehend that now you are altering the whole system you must meet their just complaints, and deal with the matter in a broad and comprehensive spirit. I know that it is a difficult question, and as the Duke of Somerset stated before the Committee of 1862, great care must be taken that in trying to do justice to the navigating class you do not do injustice to the main executive line. But it is much easier to deal with this class of officers now than it ever was, the numbers having been very greatly reduced since 1865. In that year there were 696 navigating officers of all ranks; in 1875 there are only 367, and the number will soon be further reduced, as the First Lord of the Admiralty has signified his intention of amalgamating the navigating midshipmen with the main line. Year after year promises of special promotion have been made, but with one or two rare exceptions they have never been carried out. Only so late as 1870 my right hon. friend (Mr. Childers) made a regulation that the Admiralty might promote three in each year, but instead of up to this time eighteen having been promoted, only one has received the benefit of the regulation. A few years ago you gave them relative rank according to their seniority with their brother officers in the main line, but prevented it taking effect on board ship, so that a staff-commander with twenty years' service is junior to the lieutenant of a day's standing. In cases where staff-commanders have command of store ships it is most irritating to find themselves placed under a junior lieutenant in command of a gunboat. On the other hand, officers in the main line say that is perfectly true, but they have not been brought up to a knowledge of discipline and gunnery, and why should they interfere with us? Giving every allowance to this argument, I am bound to say that the time seems to have come when, with a class gradually dying out, and with a new race of officers training up for navigating duties, you must take a somewhat determined step, and put an end once and for all to the

Grievances
of navi-
gating
officers.

constant irritation and discontent which one so constantly hears of. I would, with all due deference, solve the questions of retirement, pay, and widows' pensions by at once placing them on a similar footing as the main line. With respect to the question of rank, I would withdraw the stipulation which prevents their holding relative rank on board ship; but I would make this proviso—that in no case should the navigating officer (if of the separate class) take seniority over the commanding officer, giving him, if necessary, brevet rank. If, therefore, in a large ship, the commander and captain were both away, the first lieutenant would be acting commander, and senior to the staff-commander. By this means all difficulty as to the position of navigating officers would be removed, and, I believe, the main executive line would have no objection to the relative rank holding good when it was once made clear that the navigating officers would not interfere with the discipline of the ship. It is quite evident that some such plan must be adopted; for if the First Lord of the Admiralty carries out his proposal of amalgamating the navigating midshipmen, you will, under present arrangements, have this peculiar result—that the navigating midshipman amalgamated with the main line may, in three or four years, become a lieutenant, and then be senior to the staff-commander who had served all his life in the navigating class, and has put up during many years with his subordinate position. As the lieutenants and sub-lieutenants now being trained take the duties of navigating officers, all question of rank will subside, as these officers will be kept well versed in gunnery knowledge and the discipline of a man-of-war. The old class must now gradually die out, and I do sincerely trust the First Lord will take this to be a fitting opportunity for doing a long-deferred measure of justice to a body of men well deserving the thanks of their country. I will not detain the House any longer, and I thank them very much for the kind manner in which they have heard me. I will only say this, that I am quite at a loss to understand the amendment of my hon. and gallant friend, as he appears to concur with me as to the necessity of increased means of instruction, and ought therefore to agree with my motion. If, however, he conceals a wicked desire to bring back the old system of a separate class for navigating duties he may rest assured that it is already a thing of the past, and that no First Lord dare incur the responsibility of what could not fail to prove a most disastrous policy. The hon. gentleman concluded by moving his resolution.

The Com-
riler.

Mr. BRASSEY said, on a former occasion he had seconded a motion by his hon. friend the member for the Montgomery

Boroughs for the abolition of a separate class of officers for the navigating duties in Her Majesty's ships. Although that motion was opposed at the time by the First Lord of the Admiralty, in the following year it was announced that the Government had reconsidered the subject. He was convinced that the Admiralty were wise in their final decision. It could not be consistent that an officer should be appointed to a command, unless he possessed a competent knowledge of navigation and pilotage. The perpetuation of the old arrangement for the navigating duties of the fleet must tend inevitably to make executive officers indifferent to their nautical work; and if, as lieutenants, they were in the habit of neglecting navigation, when they came to occupy more responsible positions, in command of ships, they would run the risk of finding themselves, at a critical moment, mainly dependent on the judgment of a subordinate. When contending against a gale, on a lee shore, or in battle, when all might depend on giving or avoiding the blow of a ram, how could an officer, imperfectly acquainted with the art of steering or navigation, be regarded as competent to command?

Again, as regards the pilotage of a ship in narrow waters, Captain Washington asserts that the recent losses, to which in his memorandum he referred, pointed to a want of efficiency in the masters in that respect. 'And, indeed,' he asks, 'how should they be good pilots? They have no opportunity of acquiring a knowledge of the Channel pilotage. They cram from an epitome. What pilotage they know, then, must be learnt after they take charge as master, or second-master, of a sloop, and so far at the risk of Her Majesty's ship, although the master's commission is as master and pilot.'

Captain
Washington.

The last point to which Captain Washington refers is the duty of the master in steering and conning a line-of-battle ship or heavy frigate in the day of battle. 'Good judgment,' he says, 'united with the requisite professional knowledge, is, after all, the most valuable qualification that an officer should possess, when placed in this responsible position; but there is no reason why this rare quality should be confined to the master class.

'Apart,' he observes, 'from rendering justice to masters, it appears to me that there is a higher motive for doing away with the class, namely, the general benefit of the service, by breaking up the monopoly of a large share of professional knowledge, reserved apparently for one branch, and that not the principal executive branch of the service.

'I think it cannot be denied that the system of entrusting the pilotage and navigation of Her Majesty's ships to a single class, as

masters, must have a tendency to beget indifference or inattention to those particular duties in the lieutenants and other officers of the main executive branch.'

Captain Washington, in another portion of his able memorandum, contests the assumption, so generally taken for granted, that the masters are more competent as navigators than officers selected from the general ranks of the service. 'It is well known,' he says, 'to those who have inquired into it, and to no one better than their own brother-officers, that, with the exception of the seniors and some few picked men, there are on this head strong symptoms of deterioration, possibly, from circumstances in some degree beyond their own control, and the number of ships that have been on shore on the African, and China, and West Indian stations goes far to confirm the fact.'

The enumeration of losses, contained in Captain Washington's memorandum, is long. Unhappily, in very recent times it could be considerably extended.

Executive officers well qualified for the study of pilotage.

It could not be said that the duties of a navigating officer were too difficult for an intelligent officer, belonging to the general line of the service. The practice of navigation was so simple, that nothing more was required than accuracy in elementary arithmetic. Pilotage required more experience; but it was experience of a kind which every naval officer ought to possess. Nerve and quickness of eye were necessary to carry a vessel through a narrow and tortuous channel, between rocks and shoals—but these were just the qualities which would enable an officer to select a happy opportunity for giving the stem to an enemy. He had already expressed his satisfaction at the decision of the Admiralty to abolish the navigating class. As, however, there were to be no more navigating officers, it was necessary that executive officers should be encouraged to qualify themselves for navigating duties. For this purpose adequate inducements should be held out, and officers should be made to believe that proficiency in navigation would be as highly appreciated at the Admiralty, and would be as sure a road to promotion, as knowledge of gunnery. Once let this conviction be established generally throughout the profession, and there would be no lack of captains, commanders, and lieutenants, ready to avail themselves of any opportunity which might be accorded to them, of acquiring the requisite amount of practical knowledge. For this purpose, a special course of instruction in the pilotage of our own coasts might be established, on the same footing as the torpedo school, which had already proved so valuable to the Navy. In addition to the school of pilotage, surveys might be prosecuted with increased energy.

In an able lecture, Captain Hull, the Keeper of the Charts at the Admiralty, recently called attention to the great extent of coast which was as yet unsurveyed. Even seas which were constantly resorted to by traders, were imperfectly known. He might mention particularly the River Plate, the West Coast of South America, the Pacific, Java, and Red Seas. Surveys offered an admirable school for naval officers. Some of the most distinguished men in the Navy had spent several years in surveying ships. His practical knowledge of pilotage was of signal service to Lord Nelson. It had been stated by Sir R. Collinson that the battle of the Nile would not have been fought at the hour it was, if Nelson had not himself been a pilot. At Copenhagen, soundings were taken under the personal superintendence of Lord Nelson, and by that means his ships were enabled to take up positions within close range of the Danish batteries. Surveying was now taught at Greenwich; but not much could be done at a college in a subject so essentially practical. The teaching of the College would be thrown away, unless followed up afloat. A surveying ship could be kept in commission, according to Captain Hull, for 14,000*l.* a-year; and a larger sum was often wasted in doubtful experiments in shipbuilding. He begged to second the motion of his hon. friend.

Instruction
by means
of surveys.



SECTION V.

EDUCATION OF NAVAL OFFICERS.

SPEECHES IN PARLIAMENT,

JUNE 13, 1871. JULY 6, 1877.

(Reprinted from Hansard's 'Parliamentary Debates.')

NAVAL CADETS. -RESOLUTION.

June 13, 1871.

MR. BRASSEY rose to call attention to the Report of a Committee on the Education of Naval Officers, recently presented to Parliament, and to move:—

‘That it is expedient to adopt the recommendations of the Committee appointed by the Admiralty as to the training of Naval Cadets.’

Cadets
Age of
entry.

He said the House had been engaged last week in a discussion with reference to the manning of the Navy, and he would venture to hope that the motion which stood in his name, referring to the education of our naval officers, might be regarded as having some interest in connection with the same subject. If it was necessary to create reserves of seamen, we must have officers to command them on active service. During the last twenty years all the circumstances of sea life in the Navy had changed, through the application of steam as a motive power to vessels of war. Naval gunnery had become more complicated. The science of naval architecture had undergone a complete revolution. Again, the advance in the standard of education made it necessary that the Navy, as a great national service, should participate in the general progress, in order to hold its own with other professions. The circumstances to which he had alluded seemed to point to an extension of the time for the admission of naval cadets into the service; and he suggested that the age of sixteen was not too advanced.

Admiral
Fanshawe.

An extension of the age of admission would enable the cadet to participate in the advantages of a public school education. The following remarks were taken from a pamphlet by Admiral Fanshawe on the entry and education of naval officers:—

‘No person is more fit to enter the naval profession than a public-school boy of sixteen, of good health and abilities. He is of an age to form a rational choice of the profession he would adopt

He has passed a sufficient number of years as a schoolboy, private and public, to possess in some degree those advantages which we attribute to English school-life in the foundation of the English gentleman's character. He has sufficient knowledge of classics to derive some benefit from their historical lessons, and to encourage him to revert to them at any future time, should his tastes lead him in that direction.

'I should altogether abolish the gun-room mess, and also the Naval Instructor class. The officer of eighteen should at once join the ward-room mess, where he would associate with all the principal officers in the ship, from the second in command to those of his own rank.'

In the evidence given before the Naval Commission of 1859 Admiral Mends gave strong testimony in favour of such training; and Captain Harris, who had been in command of the 'St. Vincent,' the principal training-ship for boys at Portsmouth, had stated that the age of seventeen was the best age at which to admit lads into the Navy to be trained as men-of-war's men.

Sir W.
Mends.
Captain
Harris,
R.N.

In the discussion on the Naval Essays of 1878 at the Royal United Service Institution, Admiral Hamilton said:—

'Then comes the question as to the age of the entry and the training of officers and men. And on that point I think Captain Noel's paper is very good indeed. I have had opportunities of comparing boys from the training-ships at Portland, Plymouth, and Falmouth, entered at the early age, with boys entered in the Coastguard ship between 16½ or 18 years of age, under precisely the same system as the younger boys in training-ships. On one occasion going on board I saw some boys on the gangway who drilled so admirably that I asked the officer which of the training-ships they came from (we then had boys from 'Boscawen,' 'Implacable,' 'Impregnable,' and 'Ganges,' on board, besides the older boys): he said (to my surprise), 'They are our own first-class boys that we have raised, they have been about three months in the ship.' Those boys were one and a half to two years older than the boys coming from the training-ships. The captains of the sea-going ships to whom these boys were sent were ordered to report upon them, and the report was that these older boys, although they had not been brought up in the training-ships, were superior to the younger boys. Their instructor from the training-ships also considered them more attentive and zealous. This I think will raise

Admiral
Hamilton.

the question whether it will not be better to enter naval cadets at fifteen rather than at thirteen.'

Admiral
Ryder.

Admiral Ryder concurred in this opinion :—

'Then as to the entry and training of officers and men. This is a very large question. Someone spoke just now of the age for entering young officers. I agree with Admiral Hamilton that, provided we drew our supply from the best public schools at, say fourteen, the age for joining *sea-going* ships might with proper precautions be advanced.'

Commis-
sion on
military
education.

He might add that the Commission on Military Education had recently reported that seventeen was the age at which professional aptitude was most readily acquired. If the agility aloft and the seamanlike qualities required in the blue-jackets of the Navy could be best acquired by lads entering the service at the age of seventeen, that age would not be too advanced for the admission of young men who were to be educated as naval officers.

Sir Charles
Napier.

By the present system midshipmen were expected to do duty as officers before their education was complete. Sir Charles Napier pointed out to the Commission of 1859 that, under the existing system it was often necessary to send away a very young officer in charge of a boat, manned by seamen much more experienced than himself; and this he had always felt to be an objection, as it often led to the young officer finding fault with the men, and led to punishments, which were very injurious to the efficiency of the service.

Committee
on educa-
tion of
naval
officers.

The recent Committee on the Education of Officers had reported that there was a general incompatibility between the positions of an officer and a schoolboy, which were attempted to be combined by our present system. This double duty made the progress of the naval cadet extremely unsatisfactory. The duties as midshipmen prevented them from giving up the necessary time to general and professional instruction. In the Channel Fleet, as it was shown by a recent return, the maximum instruction to cadets was eight hours, and the minimum two hours a week. With such limited opportunities of study, it was impossible for a boy to obtain much instruction on board ship.

Foreign
navies.

While in favour of admitting cadets at a more advanced age, cadets should still be admissible at the ages fixed by the existing regulations. In foreign navies the age of admission was fixed at a much more advanced age. In the United States Navy the age was from fourteen to eighteen years; in the French, it was from fourteen to seventeen years; in the Russian it was from fifteen to

eighteen years ; while in our own service, under the existing regulations, the age was from twelve to thirteen.

The majority of our own officers, and many officers in foreign navies, are in favour of commencing the training for the sea at an early age. An instance in point may be interpolated here. In a speech delivered in 1877 at the meeting of the Société des Études Maritimes et Coloniales, Vice-Admiral the Comte de Gueydon expressed in strong terms his disapproval of the more advanced age of entry for naval cadets:—

Comte de
Gueydon.

‘ Dans un autre ordre de faits, c’est encore la méconnaissance de notre organisme qui nous entraîne à adopter, pour l’admission à l’École navale, une limite d’âge de deux ou trois ans supérieure à celle fixée pour l’entrée à l’École des mousses ; et même, à ouvrir l’accès du corps des officiers de vaisseau à des élèves sortant de l’École polytechnique dont la constitution physique a cessé d’être assez flexible pour être façonnée à la rude existence de la vie du marin.

‘ Pour n’éprouver aucun malaise quand la mer est agitée ; pour résister, sans défaillance, à des fatigues, à des privations incessantes ; pour conserver, en un mot, la plénitude de ses facultés dans toutes les circonstances critiques de la navigation, il faut (qu’on porte l’épaulette ou non) avoir pratiqué la mer dès la plus tendre jeunesse.

‘ Ainsi pensions-nous aux époques les plus glorieuses de notre histoire ; ainsi pensent toujours les Anglais et les Américains.

‘ A leurs yeux, la mer n’est pas plus douce pour les officiers que pour les matelots.

‘ On aurait de la peine à leur persuader que les chefs ne peuvent pas posséder, au même degré que leurs subordonnés, les qualités essentielles de l’homme de mer.’

Returning to the education of English cadets, the preliminary course of instruction was carried on in the ‘Britannia’ for two years, with one year’s training in a sea-going training-ship. At the age of sixteen the midshipman began to do duty as a young officer. The Committee had reviewed the whole subject very carefully, and recommended that the period of special training in the stationary ship should be extended by one year, giving three years’ special training in the stationary ship, to be followed by a year at sea in a sea-going training-ship. Assuming that no change could be made in the age of admission, the recommendations of the Committee were wise and judicious ; but he regretted that they had not seen fit to recommend boys should be entered at more advanced age.

Course of
study for
cadets.

Modern languages.

With regard to the general course of education, it seemed to be limited too exclusively to mathematical subjects, to the neglect of modern languages. In the American Navy it had been found that modern languages were not inferior to mathematics as a means of mental culture. He might refer to Professor Mayne, of the Naval College at Portsmouth, as an authority in favour of the more careful and complete study of the French language. Captain Goodenough had also adverted to the regrettable ignorance of the French language when the French and English squadrons were brought together in 1865 for the purpose of exchanging international courtesies.

Steam.

Other practical studies shared the same neglect, and he might instance particularly the study of Steam. In the United States service, they had found in the protracted war with the Southern States, that great disadvantage arose in the service from the inefficiency of the numerous engineers who were taken into the employment in the Navy, and from the inability of the executive officer to correct the mistakes of the engineering staff. Profiting by that experience the American naval authorities had introduced a practical course of steam for young officers. Provision had been made for a systematic course of instruction in steam at the Naval College at Portsmouth. A similar course should be arranged for cadets.

Brigs.

The recommendation of the Committee on the Education of Officers, in favour of fitting out two brigs to be attached to the vessels of instruction, merited the special consideration of the Admiralty. They would prove to be most valuable schools of practical instruction. Admiral Sullivan in an able memorandum on the subject specially adverted to the failure to teach seamanship on board the 'Bristol,' and expressed a hope that by employing small vessels in which the young gentlemen themselves could carry out nautical evolutions, they would thereby become better practical seamen. Another great advantage would be secured by attaching brigs to the stationary vessels. The young officers would learn the pilotage of our own waters, to which these vessels would be necessarily confined. Our ironclad vessels had tended materially to diminish the cruising experience of the young officers of the fleet, and he hoped that it might be found practicable to employ a greater number of vessels in the Mediterranean of a class that could be navigated under sail. In the American Navy such vessels were always employed on foreign stations in time of peace. The necessity for these practice ships had been shown in the evidence of Captain Goodenough, who quoted the case of a midshipman who, having served four years on board one

ship, had never seen that ship tacked under canvas. In a paper recently read at the United Service Institution the deficiency of the education of naval officers in the present day in practical seamanship was clearly shown. The necessity for such experience was fully recognised in the Cunard and other steam services, no officer being allowed to take the rank of master or chief officer without the qualification of previous service in a sailing vessel. If there were objections to the substitution of sailing frigates, with auxiliary steam power, like the steam clipper frigate of the United States Navy, for the ships now stationed in the Mediterranean, brigs might be attached to the squadrons to give the young officers experience in cruising under sail.

Many eminent witnesses who had given evidence before the Committee on the Education of Naval Officers expressed an opinion in favour of the abolition of the special class of navigating officers. The change was advocated on the ground that it was calculated to exert a beneficial influence upon the general knowledge of navigation in the Navy.

Abolition
of special
navigating
line.

The Report of the Committee of 1862 might be quoted against the abolition of a separate class of officers for navigating duties, but it was suggested that a few lieutenants should be allowed to volunteer for these duties. The experiment recommended should be tried by appointing ten officers to do navigating duties. Many eminent men in the service had given opinions in favour of abolishing the special navigating class, and Mr. Lindsay had on two occasions in able memoranda expressed a similar opinion. He would strongly urge upon the Admiralty that all the officers who had given opinions in favour of the retention of the special navigating class had also most strongly recommended that a steam vessel should be employed specially to give instructions in pilotage to young officers, who were qualifying to take charge of Her Majesty's ships. Officers should be masters of their profession before they were placed in charge of Her Majesty's ships. The recent loss of the 'Psyche,' despatch boat, on the coast of Sicily, was due to the inexperience of the navigating officer in command of the watch.

With a view to the higher education of naval officers, he invited the approval of the House to a suggestion he desired strongly to urge, for the expansion of the Naval College at Portsmouth into a great Naval University for the naval service and the mercantile marine, with power to confer degrees in all branches of science connected with the nautical profession. This proposal was originally made by some eminent Liverpool merchants and shipowners, and

Naval
University.

was favourably received by the Duke of Somerset. Such a university would seem to afford the best means of bringing the mercantile marine and the Navy more closely together, and preparing the merchant service to afford material aid in a naval war. Examinations could be held in the various ports, like those conducted by the Universities of Oxford and Cambridge, for candidates for the degree of Associate in Arts. It might be thought that a sufficient number of mercantile officers would not be found to undergo an expensive course of education, but there were already two vessels—one in the Thames, and another in the Mersey—for the instruction of mercantile officers, and both were well filled with students.

In conclusion he would make an urgent appeal to the First Lord of the Admiralty, whose early career at Rugby and Oxford had been one of more than ordinary distinction, to signalise his tenure of office at the Admiralty by the creation of a comprehensive system of education for the Navy. He begged leave to move the resolution of which he had given notice.

MOTION MADE, AND QUESTION PROPOSED.

Mr. GOSCHEN said the hon. member for Hastings (Mr. T. Brassey) had apologised to the House for having made an unnecessary speech ; but he (Mr. Goschen) could assure him that it was quite of a contrary character, and that the naval service would not complain of the tone of his remarks. They might not agree with all his observations, or all the conclusions at which he arrived, but they would concur with him in thinking that the subject was one the importance of which could not be overrated. A week ago the House was engaged in discussing the subject of the manning of the Navy, and great as was the importance of that subject, it was almost equalled in importance by the subject of to-night—namely, the education of the officers who were to take command of the ships. The hon. member had spoken of the great changes which had taken place in the Navy during the last fifty years. No doubt these changes had been exceedingly great, but the changes which had been made in the education of the naval officers, though they might not yet have been so great as was necessary, had followed the course of events, so that more attention was now paid to the education of the officers than was paid to it ten or twenty or thirty years ago. A most important change had taken place in this way—that the time during which naval cadets received instruction had almost doubled. A short time ago, a year and three months was all the time that was devoted to the cadets ; now they were instructed for two years before they were sent to sea, after which they went for a year to sea to learn their seamanship and navigation.

The hon. member had also spoken of the early age at which cadets entered the service. This was a moot point in the Navy ; and while the hon. member was able to cite opinions in favour of the later age, a very large number of officers still adhered to the idea that the cadets should be entered very young. From the strictly educational point of view, he believed that the hon. member was right, and that the nation would have a more highly educated set of officers the later

Mr. Gos-
chen.Age of
entry for
naval
cadets.

they entered the service. It was very important to secure as much school training for cadets as possible, before they entered the Navy; and, if it could be shown that by the entry at sixteen years of age, they would be as able to secure as many and as good officers as when they entered at thirteen, a very strong case would have been made out in favour of the latter age. He would be unwilling, considering the short time he had been in the Admiralty, to make any declaration of opinion as to the age at which cadets should enter the Navy. The analogy drawn by the hon. member between the Army and Navy upon that point was not conclusive, because the life which the naval cadet had to follow differed so much more from ordinary life, than the change which took place in regard to the military cadet, that he did not think they could reason from one to the other. He was informed that the boys who took to the sea very young were more likely to stick to it, and make it a profession, than those who entered later in life. And further, he would ask his hon. friend would he propose that they should have no boys who were under sixteen, or would he admit boys between thirteen and sixteen? (Mr. T. Brassey: Between twelve and sixteen.) He certainly thought that would be the preferable mode of the two. But if so, there would be a difficulty, which would be considerable—that those entered at thirteen might become seniors in time in the Navy to those who entered at sixteen, and the boys coming from the schools, and being placed under their juniors might have much to suffer, and be alienated from the service at a very early age. He would not, however, express any definite opinion upon the subject at present, but promised that it should be fully investigated, and would say that any arguments in favour of admitting cadets of greater age would receive full consideration by himself and his colleagues at the Admiralty. Great difference of opinion existed among naval men on the subject, but it was a fact that difficulty was experienced in advancing cadets in intellectual pursuits after leaving the training ship, so that it would evidently be a gain if their studies could be prolonged before they entered the Navy. When they once went to sea they ceased to make any real progress in study. The Committee which sat on this subject recommended that the naval instructors should be abolished altogether, because the number of hours of instruction was so small as to be scarcely adequate to the cost.

Period of
scholastic
training.

This brought him to another point—that the time should be extended during which cadets should be trained. Theoretically, there was a great deal to be said in favour of this plan; but on whom would the expense of an extra year's education fall? On the state, or on the parents? The naval cadets paid 70*l.* a-year for the

two years on board the 'Britannia,' and the expense was considerable on the officers who sent their sons to training. While agreeing that an additional year's schooling would be a serious thing for the officers and for the parents of the boys generally, it was deserving of consideration whether the time of training should not be lengthened. He agreed in the suggestion regarding training brigs, for they had been found to work very successfully in the case of seamen, and he did not see why it should not be equally successful in the case of naval cadets. On the whole, he was inclined to think that if the naval instructors were really not causing that progress in education that might have been wished, it might be necessary to reconsider the whole of that portion of education and see whether it could be possible to give a longer education before going to sea. But he must say that in settling that point, it was a practical consideration that boys should not go to sea at a later age than was likely to give them a taste for the sea.

The next point was this—would it be desirable to substitute French to a certain extent for the higher branches of mathematics? Nothing could be more important than to increase the knowledge of French in our officers; but he did not think it would be desirable to give up mathematics—in fact, the Committee complained that mathematics were too much neglected by our naval officers already. He thought, in fact, that the time on hand was sufficient for the study of French and modern languages, and the study of mathematics also.

Subjects
of study.

The hon. member next expressed a wish that after the naval cadets had become midshipmen there should not be a want of training in navigation, and seamanship, and pilotage. It was quite desirable in every way to stimulate those studies; but he could not agree with the hon. member's recommendation to abolish the navigating officers. There were officers in favour of their abolition, and there were officers opposed to it. His own view was that it was obviously desirable that every lieutenant should be able to navigate a ship; but that was a very different thing from abolishing the class of navigating officers. The general view of the matter was that the navigating officers should be replaced in time of war by merchant seamen, so as to liberate the fighting force; but if this were done men would be introduced on occasions of great moment to navigate ships with which they were almost wholly unacquainted. It was desirable that those who had charge of these ships in time of war should be men who were thoroughly acquainted with all their eccentricities and who had complete knowledge of ships of novel

Retention
of navi-
gating
officers.

construction—such as our ships of war: but such knowledge could not be gained in a day. It was desirable that a navigating officer should be thoroughly well acquainted with his ship, just as it was advisable for a rider to know the character of his horse. But be this as it might, he was told that there was no more valuable class of officers than the navigating officers; and as a curious illustration of how what was undervalued in one country was valued in another, he would mention that a distinguished French officer had stated that there were two points of the English system which were most admirable, and that these were our navigating officers and our marines. Our navigating officers constituted a class of officers whom of all others in our Navy foreigners most admired; and there was this further consideration—that while the mercantile marine were exceedingly valuable upon all the beaten tracks, they would not be able to compete with the navigating officers in unknown waters and under exceptional circumstances. As to training, he entirely concurred in the observations which had fallen from the hon. member, who said it was desirable to give to these navigating officers a special training for their profession. Now, no naval subject interested the Admiralty more than the education of that class of officers, and already the idea had been partly carried out; for those ships which had been employed around the coast, the ‘Fox,’ ‘Buzzard,’ ‘Medina,’ ‘Medusa,’ and ‘Dee,’ which were continually moving about the Channel, had been almost entirely officered from that class, the object, of course, being to afford to them an opportunity of acquiring the requisite experience. The Admiralty would keep an eye on the education of navigating officers, and if he attached great importance to their existence, it must not be supposed on that account he did not think progress ought to be made in the education of the active lieutenants and sub-lieutenants; on the contrary, he felt everything should be done that could be done to qualify them for the performance of their functions with greater efficiency than at present. At present, however, he was not prepared to say it would be wise to amalgamate the two classes, and do away with the class of navigating officers.

With regard to the question of age he was open to conviction, but did not think the hon. member had adduced sufficient evidence to show that any change ought to be made in that particular. As to attaching a training brig to the ‘Britannia,’ and lengthening the time of training, he thought the hon. member had made out a stronger case, and it was a subject worthy of much consideration. He also admitted that great force existed in the remarks respecting the abolition of naval instructors on board the ships of the Navy.

He could assure the hon. member that all the points he had urged would receive the careful attention of the Admiralty, and he therefore hoped the motion would not be pressed to a division.

Sir JOHN HAY said he must congratulate the hon. member for Hastings (Mr. T. Brassey) upon the excellent statement he had made to the House, and at the same time was glad to find the right hon. gentleman the First Lord giving a prudent answer to the speech. For several years he had been in favour of admitting officers into the Navy at a later age than that now fixed. He thought the age should be sixteen. No doubt it was held by high authorities that youths took to the sea more readily and became more amphibious animals if admitted at an earlier age, and that later on they were apt to become disgusted with their profession. On the other hand, it was of great importance that they should be able to go to Eton or Harrow, and enjoy the benefits of a public-school education up to fifteen or sixteen instead of being taken from private educational training at twelve. A distinguished relative of his own, Lord Dundonald, one of the most conspicuous examples of a naval officer who ever flew a flag, never went to sea till he was eighteen; and though one instance of that kind was not sufficient to prove the rule, it showed that a late age for entering the Navy was no disadvantage.

Sir John Hay.

Age of entry.

As to naval instructors, he could not quite agree with the right hon. gentleman the First Lord of the Admiralty, when he intimated that it might be advantageous that there should no longer be instructors on board the ships of the Navy, for he did not gather from the report of the Committee that they made an absolute recommendation for the discontinuance of this class of officers, and, for his part, he was entirely adverse to any such proposal. He was well aware that many naval officers had been trained without the advantage of naval instructors on board the ships in which they served; in fact, he was himself for three years on board a ship in which there was no such instructor; but in those days, the young naval officers were the *protégés* of the captains, and he personally had the good fortune to serve under a commander of great ability, who, taking an interest in the youngsters, devoted much of his time to their instruction.

Naval Instructors.

That was, however, no part of the commander's duty, and as it was impossible to calculate upon circumstances of exceptional good fortune in every case, it would be unfair to young naval officers in the present day to expect them to become efficient unless they had the assistance of competent instructors.

He had heard with pleasure the statement of the right hon.

Navigating
officers.

gentleman in reference to the navigating officers. It was a question upon which, in his opinion, it would be desirable to leave well alone. The lieutenant on board a ship might be equally skilful and competent as a navigator, but the navigating officer ought in addition to be sufficiently familiar with our coast to be able to take his ship safely into harbour without the assistance of a pilot in the darkest night of winter. It would, therefore, be a pity to abolish this class of officers.

Captain
Egerton,
R.N.

Captain EGERTON said he thought it almost impossible to fix too early an age for boys to commence their training as naval officers, so long as it was not fixed lower than twelve years ; but, at the same time, he thought no impediment should be put in the way of officers entering up to the age of fifteen or sixteen years. With regard to the education of naval officers, he feared there was a tendency in the present day to give that education too theoretical a character, to the neglect of the practical branches of their profession. For instance, out of 400 lieutenants on the active list he found that only three or four had obtained first-class certificates at the Naval College. Agreeing with the hon. and gallant baronet who had last spoken (Sir John Hay) as to the advisability of continuing the services of navigating officers in the Navy, he thought greater opportunities than they now enjoy should be afforded to these meritorious officers of obtaining the prizes of the profession. On behalf of the service, he begged to thank the hon. member for Hastings for having so ably called attention to this naval question.

Mr. T. BRASSEY said, that after the promise of the First Lord of the Admiralty that the matter under discussion should receive consideration, he would not press his motion to a division.

Motion, by leave, withdrawn.

ADMIRALTY MINUTE ON THE FORMATION OF THE ROYAL NAVAL COLLEGE.

In January, 1873, an Admiralty Minute was issued, sanctioning the formation of the present Royal Naval College at Greenwich. It may be desirable to quote the earlier section of the Minute, giving a general outline of the studies which it was designed to encourage at the College.

‘ Her Majesty by Her Order in Council, dated January 16, 1873, having sanctioned the founding of a Royal Naval College at Greenwich, my Lords have determined to open the said College on February 1 next, at which date the instruction of the gunnery lieutenants and the sub-lieutenants will commence. The arrangements for the higher courses of study will not be complete till the beginning of the ensuing term on October 1, but special provisions have been made to prevent any interruption or disarrangement in the studies of any class of students who will hereafter be admitted to the College.

‘The College, subject to the subjoined regulations, will be open to officers of the following ranks:—

1. Captains and commanders.
2. Lieutenants.
3. Navigating officers.
4. Naval instructors.
5. Acting sub-lieutenants and acting navigating sub-lieutenants.
6. Officers Royal Marine Artillery.
Ditto Royal Marine Light Infantry.
7. Officers of the Engineer branch, viz. :—
 - Chief engineers.
 - Engineers.
 - First-class assistant engineers.
 - Acting second-class assistant engineers.

8. A limited number of dockyard apprentices will be annually selected by competitive examination for admission to the College.

‘A course of instruction at the College will also be open to a limited number of—

9. Private students of naval architecture or marine engineering.

10. Officers of the mercantile marine.

‘It is not intended to provide at Greenwich for the education of the naval cadets.

‘My Lords intend that the Royal Naval College at Greenwich shall be so organised as to provide for the education of naval officers of all ranks above that of midshipman, in all branches of theoretical and scientific study bearing upon their profession; but my Lords will continue the instruction given in the “Excellent” gunnery ship as heretofore, and arrangements for instruction in practical surveying will also be continued at Portsmouth.

‘My Lords desire, by the establishment of the College, to give to the executive officers of the Navy generally, every possible advantage in respect of scientific education; but no arrangements will be made at all prejudicing the all-important practical training in the active duties of their profession.

‘The object of securing, in the interest of the naval service, the highest possible scientific instruction is, in the opinion of my Lords, most effectually to be attained by bringing together in one establishment all the necessary means for the higher education of naval officers and of others connected with the Navy.

‘The number of students at the College will render it possible not only to carry out instruction by individual tuition, as hitherto, but to secure a staff of eminent professors, to arrange lectures and classes, and to provide chemical and physical laboratories, on a scale which has hitherto not been possible in any naval establishment.

‘Complete courses of study suitable for the different classes of students admitted will be organised; and will be carried out by professors, lecturers, and instructors. Officers and others admitted as *students* will have the advantage of these courses of study, whether they reside or not. But officers and others who may not become students will, under certain regulations, have free access to separate courses of *lectures*, the benefit of which it is desired to extend as far as possible.

‘The following are the proposed courses of study:—

Subjects.

1. Pure mathematics, including co-ordinate and higher pure geometry, differential and integral calculus, finite differences, and the calculus of variations.

2. Applied mathematics, viz., kinematics, mechanics, optics, and the theories of sound, light, heat, electricity, and magnetism.

3. Applied mechanics, including the theory of structures, the principles of mechanism, and the theory of machines.

4. Nautical astronomy, surveying, hydrography, with maritime geography, meteorology, and chart drawing.

5. Experimental sciences:—

a. Physics, viz., sound, heat, light, electricity, and magnetism.

b. Chemistry.

c. Metallurgy.

6. Marine engineering in all its branches.

7. Naval architecture in all its branches.

8. Fortification, Military Drawing, and Naval Artillery.

9. International and Maritime Law; Law of Evidence and Naval Courts-Martial.

10. Naval History and Tactics, including Naval Signals and Steam Evolutions.

11. Modern Languages.

12. Drawing.

13. Hygiene—Naval and Climatic.

‘A certain latitude in selecting such courses of study as they may prefer will be allowed to officers voluntarily attending the College. Officers and others required to attend by the regulations will follow such courses of study as may from time to time be prescribed.

‘The general organization of the College will be as follows:—

‘A flag officer will be President; he will be assisted by a captain in the Royal Navy in matters affecting discipline, and in the internal arrangements of the College unconnected with study.

‘A Director of Studies will, under the President, organise and superintend the whole system of instruction, and the various courses of study.

‘There will further be—

A Professor of Mathematics.

A Professor of Physical Science.

A Professor of Chemistry.

A Professor of Applied Mechanics.

A Professor of Fortification.

‘Such instructors in mathematics and the other branches specified as may be necessary to assist the professors will be added to the staff. Lecturers will be appointed to deliver courses of lectures in

Naval Architecture, Metallurgy, Civil and Hydraulic Engineering, Maritime Law, Naval History and Tactics, and Hygiene.

‘A naval officer will conduct instruction in Nautical Astronomy and Surveying, and there will be two instructors in Steam.

‘Such provisions will be made for instruction in French and German and in Drawing, as the numbers of students desirous of following courses in these branches may render necessary.

‘Arrangements have been made for the admission of naval engineer officers to the College, which will prevent time spent at the College from entailing any pecuniary loss upon them.

‘The School of Naval Architecture at South Kensington will be absorbed in the Royal Naval College, Greenwich. The regulations for the admission of engineer students and of dockyard apprentices have been so framed as to provide as nearly as possible the same aggregate time for their instruction as that which is now afforded at South Kensington. Further regulations will be issued by their Lordships in regard to the admission of private students to the course of study at the College on similar conditions to those now existing at South Kensington.

‘My Lords have further determined to admit a limited number of officers of the mercantile marine as students of the College, enjoying the full advantages of the whole course of instruction and tuition by the educational staff, while officers of the mercantile marine generally will, on application, be allowed to attend courses of lectures.

‘The paramount object which my Lords have pursued in the organisation of the College has been to provide the most efficient means for the higher education of naval officers adequate to the constantly-increasing requirements of the service; but my Lords also anticipate great advantages from the results likely to accrue from the connection which will be established through the College between men distinguished in the various departments of mathematical, physical, and chemical science, and those practical problems which so vitally interest the navigator, the naval architect, and the naval engineer.

‘My Lords expect the College to become, not only an educational establishment affording the means of the highest training in theoretical subjects to naval officers of all classes, but also a nucleus of mathematical and mechanical science specially devoted to those branches of scientific investigation which have most interest for the Navy.’

NAVAL UNIVERSITY AT GREENWICH. SPEECH OF
THE COMPILER ON THE EDUCATION OF NAVAL
OFFICERS.

Delivered in the House of Commons, Friday, July 6, 1877.

(Extracted from Hansard's 'Parliamentary Debates.')

Mr. BRASSEY, in rising to call attention to the course of study pursued at the Naval University at Greenwich, said, that the education of naval officers, although a less sensational topic than other controversies connected with the Navy, was a question of the utmost importance. Some years ago he had invited the attention of the House to the report of the Committee on the higher education of naval officers, and he had never ceased to watch the Naval University at Greenwich with the deepest interest. While admitting that the resources of that University had in the main been well applied, the recent report of the Committee, appointed by the Admiralty to inquire into the organization of the College, suggested some doubts as to whether the studies of half-pay officers, who were voluntary students, had been in all cases judiciously chosen. There was reason to apprehend that the Naval University had failed to remove one most serious defect in naval education. He referred to that essentially important subject for naval officers, a knowledge of foreign languages. There was a twofold object in the establishment of the College—first, to increase the technical knowledge and skill of officers; and, secondly, to cultivate their general intelligence. Such being the objects, the question was whether there was not some reason to apprehend, from the report of the Committee, that the study of mathematics had been too rigorously insisted upon. In the words of the Committee of Inquiry—‘The back-bone of the instruction at the Naval College consists of mathematics.’ The Committee did not depreciate the importance of mathematics as the foundation of many branches of study essential to a naval officer, but they were of opinion that only a limited knowledge was necessary

The Com-
piler.

Subjects
of instruc-
tion at the
Naval
College.

for the effective performance of the technical duties of a seaman, and for the practical application of these branches of physics and applied mechanics, which most immediately concerned his profession. Few books could be more useful to a naval officer than Arnott's 'Physics,' and it was a work which could be mastered without mathematics. To the scientific artillerist and shipbuilder, or to understand the theory as distinguished from the practice of navigation, mathematics were essential, but they would do nothing to supply quickness of eye to the pilot, or fertility of resource to the seaman. He would like to refer to some remarks on this subject made by Professor Faraday in giving evidence before the Public Schools Commission:—

The following question was put by Lord Clarendon:—"You are probably aware that what our great schools aim at most is to give a good training to the mind, and it is there considered that that is done most effectually by the study of the classics and of pure mathematics?"

Professor
Faraday.

Professor FARADAY:—I should like a profound scholar to indicate to me what he understands by the training of the mind in a literary sense, including mathematics. What is their effect on the mind? What is the kind of result that is called the training of the mind? or what does the mind learn by that training? It learns many things I have no doubt. By the very act of study it learns to be attentive, to be persevering, to be logical according to the word logic. But does it learn that training of the mind which enables a man to give a reason in natural things for an effect which happens from certain causes; or why in any emergency or event he does or should do this, that, or the other? It does not suggest the least thing in these matters. It is the highly educated man that we find coming to us again and again, and asking the most simple question in chemistry or mechanics.

Dr. Car-
penter.

Dr. Carpenter, in his evidence, spoke of mathematics as a subject entirely apart from an experimental knowledge of the facts of the physical sciences. He had seen striking instances of the want of scientific habits of mind in men of high mathematical attainments.

Professor
Owen.

Professor OWEN gave evidence on the same subject. 'Grammar,' he said, 'and classics, arithmetic and geometry, may be the most important disciplinary studies; we know the faculties of the mind they are chiefly calculated to educe; but they fail in bringing out those which natural history science more especially tends to improve. I allude now to the faculty of accurate observation, of the classification of facts, of the co-ordination of classes or groups; the arrange-

ment of topics, for example, in their various orders of importance in the mind, giving to a writer or public speaker improved powers of classifying all kinds of subjects. Order and method are the faculties which the elements and principles of the science are best adapted to improve and to educe.'

Professor CARPENTER, in the course of his examination, said :—

Mathematical training exercises the mind most strenuously in a very narrow groove. It starts with axioms which have nothing to do with external phenomena, but which the mind finds in itself; and the whole science of mathematics may be evolved out of the original axioms which the mind finds in itself. Now, it is the essence of scientific training that the mind finds the objects of its study in the external world. As Bacon says, 'Homo minister et interpres naturæ.'

The Commissioners, in their report, rightly insisted on the necessity of combining modern languages and general knowledge with studies of a more severely disciplinary character.

Report of
Committee
on Royal
Naval
College.

'It is the office of education, not only to discipline some of the faculties, but to awaken tastes that may be developed in after life, to impart early habits of reading, and to furnish the mind with knowledge.

'To train and discipline is not the only office of education. And we cannot but remark that whilst in the busy world too great a value, perhaps, is sometimes set upon the actual acquisition of knowledge, and too little upon that mental discipline which enables men to acquire and turn it to the best account, there is also a tendency which is exactly the reverse of this, and which is among the besetting temptations of the ablest schoolmasters; and that if very superficial men may be produced by one of these influences, very ignorant men are sometimes produced by the other.'

The Commissioners recommended the study of history in combination with modern languages, and rightly observed that an intelligent student could hardly fail to form a new estimate of the French language after he had been introduced to the pages of Guizot or de Tocqueville.

This exaggeration of the importance of mathematics to a naval officer recalls the description given by Dean Swift in his account of Gulliver's voyage to Laputa, of the *modus operandi* adopted by the tailors in that extraordinary country. 'The operator,' he says 'did his office after a different manner from those of his trade in Europe. He first took my altitude by a quadrant, and then, with rule and compasses, described the dimensions and outlines of my whole body,

all which he entered upon paper.' Now, it is important to note the result. Were Gulliver's clothes more accurately adjusted to the figure, than garments cut out by less scientific methods? Nothing of the sort. We are told that in six days the tailor 'brought my clothes, very ill-made, and quite out of shape, by happening to mistake a figure in the calculation.' Applying the lesson taught in this amusing fable to the subject immediately before us, it may be affirmed that men whose knowledge does not extend beyond plain arithmetic, are quite as well qualified as men of the very highest mathematical attainments for the practice of navigation, as distinguished from the comprehension of the theoretical and scientific basis on which the practical application depends.

Time at college insufficient for complete course of studies.

He need not pursue the subject further. No doubt mathematics were of special value to naval officers, and would form the groundwork of any complete course of naval education; but in the case of half-pay officers, the time at their disposal at Greenwich was not sufficient for a complete course of training, and if their limited time were too largely occupied with mathematics, it was only too probable that subjects of more practical importance would be neglected. The students at the College were not idle. Captain Curme informed the Committee that he studied ten hours a day. Yet, notwithstanding their assiduity, the officers had no time at their disposal for many valuable subjects. One lieutenant stated in evidence that:—

'The lectures on physics were so few that he could not possibly have got his first-class certificate in them, or in winds and currents, if he had not availed himself of private tuition. For the last month there was an extra lecture on steam, from four to five o'clock, twice a-week. If he had had the same in physics it would have made a great deal of difference. Moreover, on winds and currents, there was no lecture during the last two months he was there.'

Subjects recommended by Committee on the Naval College.

Experimental physics, practical mechanics, modern languages, and international law were recommended by the Committee as alternative subjects of equal value with the higher mathematics. In making this recommendation the Committee had said:—

'We wish to guard ourselves against approving a course of study which should be chosen simply because it was easier.'

Whatever the subject selected by the candidate, they recommended that the standard of examination should be such as implied in the student both diligence and aptitude.

The reasons why so much importance—he might say undue importance—was given to the mathematical studies of the senior officers at Greenwich were not far to seek. Prior to the establish-

ment of the Naval College, mathematics was the only subject, not strictly of a professional character, which was systematically taught in the Navy. The consequence was that the majority of the superior officers, who distinguished themselves by their scholastic attainments, were mathematicians, and they naturally attached special value to the subject in which they were themselves most proficient. There was a tendency generally, in educational matters, to fall into a groove. This tendency was specially pointed out in the report of the Public Schools Commission. As they justly observed, a master could only teach those branches of knowledge in which he had himself been instructed; and it was only natural that he should attach the highest importance to those studies in which he was himself proficient.

Following the opinion of the recent Greenwich Committee, he would urge that the course of study for commanders and captains should be varied, and that they should be allowed to make their own choice of studies from among the numerous subjects which were recognised at the College. They should be examined periodically, and as a further guarantee for their diligence and discipline they should be placed on full pay so long as they were permitted to reside at the College.

The Committee on Higher Education were of opinion that the study of French was of particular importance, and they further recommended that opportunities should be afforded for learning German. The attention of the Committee had been specially directed to this subject by several most competent witnesses. They examined Colonel Williams, who had been for five years instructor in fortification at the Royal Naval College, and who told them that ignorance of French and German was the thing from which our naval service suffered more than anything else. Commander Wharton, who had obtained the Beaufort testimonial, went so far as to say that French was a far more useful subject for the average naval officer to study than mechanics. Passing to the evidence collected by the recent Committee on the Naval College, he might refer to the evidence of Captain Curme, an officer who had passed successfully through a course at Greenwich, and who expressed himself as follows:—

Modern
languages.

Captain
Curme.

‘There is no one thing in which most of us feel our deficiency more than in the fact that so few of us are linguists. I am sorry to say that frequently a foreign officer comes on board one of our ships and it is rare to find anybody that can talk to him.’

If he were allowed to refer to information obtained from private

Modern
languages
essential in
diplomatic
negotia-
tions by
naval
officers

Encourage-
ments to
study of
modern
languages.

sources, the House would be surprised to know how deficient naval officers were in the knowledge of languages. In time of war the knowledge of languages was, as a matter of course, still more essential. As it was well said by Admiral Jurien de la Gravière :—‘ *Petite ou grande, la politique est dans la destinée de tout officier de marine.*’ The advantages of a knowledge of languages to a naval officer in a high command were never more conspicuously illustrated than in the operations of the combined fleets off Carthage. The consultations with the Admirals in command of the combined squadron, and the negotiations with the leaders of the Intransigentes required the constant use of many languages. The success achieved by Sir Hastings Yelverton in sustaining the honour and authority of England, without resorting to open hostilities, was due not only to the tact which he displayed, but to his rare facilities for carrying on a personal intercourse in many languages. Was it not reasonable to infer that many little wars might have been prevented by a timely explanation in the language understood by the enemy? In short, the study of languages was obviously so essential to the efficiency of the Navy that the sole question was as to how it could be most effectually encouraged. The only direct step which had hitherto been taken by the Admiralty had been the issue of a circular, in July, 1874, inviting candidates to offer themselves for examination in French, Spanish, German, Italian, and Portuguese. The names of successful candidates were to be noted for employment in flag and senior officers’ ships, as Interpreters of the first or second class. When so appointed, those of the first-class were to receive an allowance of 2s. 6d. a-day, and those of the second-class an allowance of 1s. 6d., in addition to their pay. A reference to the *Navy List* showed that only three commanders and ten lieutenants had passed the examination. This was a number obviously too small for the requirements of the Navy, and the inference might reasonably be drawn that further inducements were necessary. Admiral Shadwell’s Committee had reported that it would be advantageous to the public service if, under suitable regulations, officers could be permitted to visit foreign countries for the purpose of studying the languages. They were to be placed on full pay and allowed harbour-service time if on their return they could pass the prescribed examination. As a further inducement to officers to qualify as interpreters, the Committee recommended that all officers who had successfully passed the required examinations should receive the extra allowance whenever they were placed on full pay. The Committee concluded their recommendations on the subject of foreign languages with a reference

to the suggestions of Admiral Milne, who advised that on foreign stations, when in harbour, captains should be directed to obtain the services of French and drawing masters ; and that a moderate grant should be given by the Admiralty to young officers to enable them to pay such masters. He (Mr. Brassey) most earnestly recommended to the present Admiralty the adoption of these suggestions. The English Navy was behind the navies of all the other European Powers, except, perhaps, the French, in this most valuable attainment ; and while the French were improving very much in this respect, and specially in their knowledge of English, he was assured that among the younger officers of our own service there was even less disposition than formerly existed to apply themselves to this study. In the opinion of the responsible authorities at Greenwich, it was impossible to impart the requisite knowledge at the Naval University. It was in foreign countries that it could be most effectually acquired. Every naval officer ought to spend a portion of his half-pay abroad, until he had mastered at least one foreign language thoroughly. The strongest recommendations on this behalf had been made by the Committee on Naval Education, and by individual officers of the highest distinction. He ventured, therefore, to hope that the Admiralty would no longer hesitate to adopt the remedial measures required to supply the most serious educational deficiency of our naval service.

In urging the subject of the revision of the course of study at Greenwich on the attention of the Admiralty, he wished to guard himself against being misunderstood. He was not an opponent, but, on the contrary, an advocate of a special mathematical training for the Navy. His remarks applied exclusively to the case of senior officers of the rank of captain or commander, who went to Greenwich for short periods as voluntary students, and who, he ventured to maintain, should be allowed a reasonable discretion in the choice of any branches of study, recognised and taught at the College, which they might desire to follow.

REPORT OF THE ROYAL NAVAL COLLEGE COMMITTEE.

THE views which the Compiler ventured to put forward in Parliament with reference to the inexpediency of requiring that every officer at the Royal Naval College should devote the larger share of his time and labour to mathematical study, were derived from the report of the Committee of Inquiry, appointed in 1876. The Committee consisted of Sir Ralphingen, Permanent Secretary to the Treasury, the Rev. H. A. Morgan, of Jesus College, Cambridge, and Major Donnelly, R.E., with the Rev. Osborne Gordon as Chairman.

The seventh chapter of their report is here inserted, as containing a strong recommendation, on the highest authority, in favour of allowing officers who have no natural aptitude for mathematics to apply themselves to other subjects of study, of great value to the naval profession.

‘CHAPTER VII.

‘*As to Subjects of Study other than purely Mathematical.*

‘134. From the nature of our instructions, we have not, as already stated, thought it our duty to comment in our report on the course of study laid down for the various classes of officers. But we believe it may be useful to the Admiralty to append the following brief summary of opinions we have formed during our inquiry on the general scope and direction of the instruction afforded at Greenwich. We have taken no evidence directly on this question. It must, therefore, be understood that our remarks are only such as are dictated by the casual observations and references which were inevitable from the intimate relation of our inquiry to the wider question of the character of instruction best fitted for the object in view.

‘135. The instruction at the Naval College for all branches of the service, while it embraces many subjects, is nevertheless undoubtedly essentially mathematical; that is to say, the backbone of

the course consists of mathematics. To success in that study is awarded the largest proportion of marks; and other subjects, not purely professional, must therefore be looked upon rather in the light of accomplishments.

‘136. We take it that the object of the College is twofold,—primarily to increase the technical knowledge and skill of naval officers; and secondarily, by cultivating their general intelligence, to improve their aptitude for the various duties which a naval officer is called upon to perform under the most diverse circumstances and in most difficult positions.

‘137. We have already quoted Dr. Hirst's opinion on the subject of the study of mathematics, with which we fully agree; and it is scarcely necessary for us to say that we in no way desire to depreciate the importance, or undervalue the direct bearing, of mathematics on the professional acquirements of naval officers. But it must be remembered that to a large class of minds mathematical or analytical reasoning is entirely foreign. The use of the higher mathematics, especially, as a tool is never thoroughly grasped by them—never grasped in a form to be afterwards applied. Such minds are deficient in that power of abstract reasoning which the use of mathematical symbols implies, or they cannot attain any facility in their manipulation. The want of this power is undoubtedly, *per se*, a great drawback. The more complex a problem, which is stateable in terms of number or form, the more valuable, if not necessary, becomes the application of mathematical analysis. And when the facts or data are very numerous or interdependent it becomes impossible to deal with them to any purpose without its aid. Our argument goes only to this extent, that faculties which are forthcoming should be made the best of, and not be wasted in the endeavour to confine them to uncongenial uses.

‘138. Now, it must be admitted that the technical duties of a seaman and of a naval officer—if we leave out of consideration the more abstruse problems connected with nautical astronomy, navigation, shipbuilding, and gunnery, with which comparatively few naval officers can ever be called upon to deal—necessitate but a limited knowledge of mathematics, and that an intelligent apprehension of the principles on which the technical rules of the profession are founded may be obtained with a good knowledge of arithmetic, and the elements of algebra, geometry, and trigonometry.

‘139. The branches of science with which in his professional duties a naval officer is most likely to have to deal are physics and applied mechanics.

‘As regards physics, it cannot be said that a knowledge of mathematics, beyond the elementary branches we have specified, is necessary in order to understand those parts of essentially experimental sciences, which are in practice the most valuable.

‘As regards applied mechanics we may quote the opinion of Professor Goodeve, himself an able mathematician:—

“Granted that those who in recent years have invented and developed the machinery of our workshops, that such men as Whitworth, Clement, and Roberts have laboured without any assistance from abstract theoretical knowledge, and with the help only of their own natural genius in reasoning logically upon what they have observed; granted that the creative minds of Watt, Telford, and Stephenson, although never trained to the study of mathematics, have given us our steam-engines, our canals, and our railways; and it must surely be conceded that there is an enormous field of useful mechanical knowledge in which a man may work successfully for the good of others without being competent to follow the symbolical reasoning of a mathematical treatise. Can it be denied that the principles of mechanics have been understood by those who have shaped and fashioned with their own hands the very subject-matter which gives the science a real existence? And are we not compelled to admit that the path which these men have opened out so successfully may be safely trod by hundreds of the mechanics of our workshops, who will be enabled, when properly guided, to understand and master the solution of many a problem of engineering, and to comprehend many a complicated piece of mechanism, with no further aid than that derived from patient thought upon the principles involved, and a careful comparison of the successive steps which have led previous inventors to the complete and final result?”

‘140. Again, there is no acquirement which is more likely to be of practical use to a naval officer than a knowledge of modern languages, modern history, political geography, and the outlines of international law. In dealing with foreigners in all parts of the globe, whether it be the natives of the ports visited, or the officers of foreign navies with whom he is brought in contact, a knowledge of modern languages must be of immense importance. That an officer who often has to act on his own judgment in delicate questions of international law, of vital importance, not only to himself but to his country, should have every assistance which a knowledge of the broad principles of that law can afford him, is evident.

‘141. Is it, then, advisable to make the instruction in what may

be termed the Staff College—the instruction, that is, of half-pay officers—so exclusively mathematical? It will, for the reasons already stated, we believe, be admitted by all mathematical teachers that on a large proportion of men, however intelligent in other lines of thought, higher mathematics are practically thrown away. They may afford a kind of mental discipline, but they are never assimilated in a form to be applied.

‘142. As it is very soon discovered who can and who cannot be trained mathematically to any good purpose, we would suggest for the consideration of the Lords Commissioners of the Admiralty, whether it would not be of advantage to the service and to the country to afford an opportunity for those officers who are found to have no aptitude for mathematical reasoning, but still are anxious to study and improve themselves in the intelligent exercise of their profession, to turn their attention to experimental physics,—a subject which, when taught systematically and practically, is so well calculated to increase the powers of observation,—and to practical mechanics, as well as to modern languages and international law, so as, while requiring from all officers strict proof that they have acquired the indispensable minimum of mathematical knowledge, to give to those other subjects an alternative and equal value to that which is now assigned to higher mathematics.

‘143. Our observations, which, as we have said, must only be regarded in the light of suggestions for further consideration, are not intended to apply to the course for sub-lieutenants, so long as the minimum therein required is restricted to such a knowledge of mathematics as is absolutely essential for an intelligent carrying on of the simple professional duties of a naval officer.

‘144. We wish also to guard ourselves against recommending a course of study which should be chosen simply because it was easier. It is part of our recommendation that the standard of examination in physics, mechanics, languages, and law, should be such as implies in the student who passes it successfully both diligence and aptitude for the study selected.

‘145. We cannot help also suggesting, with regard to the examinations afloat, how much might be made of questions which obliged the young officers to study closely and intelligently not only books, but the mechanism itself (structure and engines) of the vessels in which they were serving.’

FLEET CIRCULAR, No. 48.—N.

Admiralty, December 9, 1880.

ROYAL NAVAL COLLEGE PRIZES.

With a view to the encouragement of scientific study at the Royal Naval College, my Lords Commissioners of the Admiralty are pleased to issue the following regulations :—

1. The arrangement under Circular No. 8 C., of January 30, 1873, by which prizes of 100*l.*, 80*l.*, and 50*l.* are paid for three years, is cancelled, except as regards the present holders.

2. Prizes of the same total value will be awarded, as stated below, so soon as the new arrangements come fully into operation, and the entire amount of each prize will in future be paid in one sum.

(Class *a.*) Three prizes of 100*l.*, 80*l.*, and 50*l.*, respectively :

In order of merit for general proficiency.

(Class *b.*) Two prizes of 80*l.* each :

For the Gunnery and Torpedo Lieutenant gaining the highest marks in their respective courses.

(Class *c.*) Six prizes of 50*l.* each.

For the officers gaining the highest marks in the following subjects, viz. :—

I. Pure and Applied Mathematics.

II. Physics and Chemistry.

III. Navigation and Nautical Astronomy, including Marine Surveying.

IV. Marine Engineering and Naval Architecture.

V. Fortification and other military subjects.

VI. Foreign Languages.

3. The prizes specified above will be open to Executive and Navigating Officers above the rank of Sub-Lieutenant, and to Marine Officers either above the rank of Subaltern, or of eight years' standing in that rank who have served three years at sea, subject to the following provisions :—

I. Officers undergoing the Gunnery and Torpedo courses will only be allowed to compete for the prizes specially appropriated to them. (Class *b.* in Article 2.)

II. An officer will not be allowed to take more than one prize at the conclusion of any one session, and will not be eligible for a prize identical in description with one which he may have already received.

III. The award of prizes will be dependent on the attainment of a certain standard of proficiency, to be hereafter determined.

VI. Officers will not be eligible to compete for the prizes of Class *c.*, Article 2, unless they have attended the College lectures on the particular subject in which they compete.

Temporary Arrangement.

4. As, owing to the three years' duration of prizes already granted, a part only of the amount annually provided for the purpose will be available for new prizes until June 1883, their Lordships have been pleased to sanction the grant of the following prizes at the close of the sessions 1880-81 and 1881-82, viz. :—

1880-81.

One prize of 80*l.* (Class *b.* in Article 2.)

For the Gunnery or Torpedo Lieutenant gaining the highest number of marks in their special courses.

Three prizes of 50*l.* each (Class *c.* in Article 2.)

For proficiency in subjects I. to III.

1881-82.

Two prizes of 80*l.* each (Class *b.* in Article 2.)

For the Gunnery and Torpedo Lieutenant gaining the highest number of marks in their special courses.

Six prizes of 50*l.* each (Class *c.* in Article 2.)

For proficiency in subjects I. to VI.

By command of their Lordships,

ROBERT HALL.

To all Commanders-in-Chief, &c.



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SECTION VI.

*EDUCATION OF OFFICERS FOR THE
MERCANTILE MARINE.*

SPEECH IN PARLIAMENT,
MAY 16, 1876.

EDUCATION OF OFFICERS FOR THE MERCANTILE MARINE.

House of Commons, Tuesday, May 16, 1876.

MR. BRASSEY, in rising to move—

‘That it is expedient that voluntary examinations should be held under the Board of Trade in modern languages and commercial law, and that further inducements should be given to merchant officers to study at the Naval University at Greenwich,’

Inadequate
education
of masters
of mer-
chant
ships.

said, that, amid the long debate on the causes of shipwreck in which they had lately been engaged, the efficiency of the officers of the merchant service had never been called in question. While it was generally acknowledged that the examinations for masters and mates conducted under the Board of Trade had produced excellent results, it was obvious, from the consular reports, to which he would shortly refer, that the condition of the merchant service as to officers still left much to be desired. It would be his duty to insist chiefly on the defects of the inferior class of shipmasters. He desired, however, not to be misunderstood, as intending to draw a general indictment against our merchant officers. The state of the profession might still be accurately described in the language of Lord Ellenborough, in the report of the Committee on Pensions:—

‘Masters of merchant vessels differ widely in their qualifications and character, and are of many various grades in society. While some may be little superior to seamen, there are others not only distinguished by the highest acquirements in the practice and science of navigation, but as gentlemen of the best education and manners.’

Losses
from bad
navigation.

His object on the present occasion was to induce the Government to make further efforts to raise the standard of professional knowledge among the merchant officers of the inferior class; and, in order to show how necessary it was that something should be done, he would refer, in the first place, to the report of the Commission on Unseaworthy Ships, wherein it was stated that while from 1856 to 1872, inclusive, only sixty ships were known to have been lost

from defects in the vessels, 711 were lost from neglect and bad navigation. As a commentary on these melancholy statistics, the Mercantile Marine Association of Liverpool had lately re-published the following observations from the *Shipping Gazette* :—

‘Great as is the improvement in the *status* and condition of merchant captains and officers, which has resulted from the Board of Trade examinations, the system has not by any means completed its work, or produced all the results of which, properly administered, it is capable.’

He would now refer to the replies of Her Majesty’s Consuls to the letter of the hon. member for Reading (Mr. Shaw-Lefevre), calling for their opinion as to the condition of the merchant service. Similar inquiries had been made in 1843 and 1847, and a comparison of the earlier reports with those of 1872 showed a marked improvement. As a rule, steamers and first-class sailing ships were well commanded. Good ships generally attracted good crews; but, in inferior ships, many even of the latest reports indicated a state of things which was far from satisfactory. It would be necessary to give a few quotations, in order to convince the House of the necessity for reform. Mr. Mark, British Consul at Marseilles, had written as follows :—

Consular
reports.

Mr. Mark.

‘England is not fairly represented by the men who command her ships on the ocean. The grossest ignorance is seen, and drunkenness largely prevails among them.’

In those branches of trade, in which British ships competed with foreign vessels commanded by a superior class of officers, shippers naturally gave a preference to the foreign flag. Sir S. R. Crowe, our Consul-General at Christiania, said :—

Sir S. R.
Crowe.

‘In cases of competition between British and Norwegian ships, when the master of the latter accepts the same rate of freight as his British competitor, he will generally be preferred; as the British sailing ships visiting Norway are commanded by third and fourth class masters, who frequently have neither education nor sobriety to recommend them.’

Mr. Ward, Vice-Consul at Memel, had made a similar report :—

Mr. Ward.

‘It is only too true that the German seamen, and more especially the masters of ships, are, as a rule, a very superior class of men in point of ability, education, and manners, in comparison with British seamen and masters employed in the Baltic trade.’

We had a similar opinion from Mr. Doyle, Consul at Pernambuco :—

Mr. Doyle.

‘The masters of British sailing ships are, as a rule, a proverbial

contrast to the masters of ships of most other nations; and it is a wonder, considering the disproportion between the remuneration for which British masters work, and the valuable property entrusted to them, that the navigation of these vessels and the trade through them is carried on with so much honesty and regularity.'

Mr. Gould. He would next refer to the report of Mr. Gould, our Secretary of Legation at Stockholm, on the British shipping trade with the Baltic:—

'In 1872, 1,714,000 tons of shipping were employed in the direct trade between Sweden and Great Britain. Only 25 per cent. of this tonnage was British.'

The Swedish shipowners had no advantages in the cost of building and sailing their ships. Mr. Gould attributed the success of the Swedish shipowners solely to the superior education of the masters they employed. Our shipmasters were totally ignorant of the Swedish language, while the Swedish and Norwegian masters were as much at home in England as in their own country.

Insufficient
salaries in
mercantile
marine.

It had not been a difficult task to show that, in the inferior class of British merchant vessels, many officers were to be found who were ill-conducted and badly educated. It was not equally easy to provide a legislative remedy for the evils which had been described. As a rule, only the ill-paid were ill-conducted; and it was impracticable for the Legislature to regulate the private bargains between needy shipmasters and parsimonious shipowners. His statement, however, would be incomplete without some reference to this aspect of the question. Mr. Mark, our Consul at Marseilles, said that British shipowners should give better remuneration to their captains and oblige them to hold a share in their vessels. Captain Toynbee, in a speech delivered last year at the Society of Arts, pointed out that there were masters of ships of 800 tons, in the East Indian trade, whose salaries were only 10*l.* a month. The institutions set up by the benevolent for the relief of merchant seamen were chiefly used for the benefit of the officers under whom they serve. Of the 1,200 orphans, who had been inmates of the Merchant Seamen's Orphan Asylum at Snaresbrook, the children of captains number 637, those of mates 330, while the children of seamen were only 77 in number. There were at present 254 orphans at Snaresbrook; but, of these, only sixteen were the children of seamen. While he admitted that the question of remuneration must be left in the hands of the shipowners, he ventured to hope that an expression of opinion in that House might have the effect of establishing a more just view of the responsibilities which belonged, and of the reward which was due, to

the masters of merchant ships freighted with valuable cargoes, and often carrying hundreds of human beings.

Turning from the remuneration to the professional education of merchant officers, the examinations already established had done great good; and the Board of Trade would do well to proceed further in the same direction by encouraging a broader education for the merchant service. Modern languages, as suggested by Mr. Gould, and the elements of a commercial education, should be added to the subjects included in the present examinations. The new subjects might at first be offered voluntarily by candidates, to whom an honorary certificate might be given, like that already granted for superior proficiency in mathematics. In the merchant service a knowledge of languages was, at least, as essential as a high standard of mathematical attainments. You might make a good landfall without trigonometry; you could not trade with people whose language you did not understand.

Board of
Trade ex-
aminations.

In offering these suggestions to the Government, he might refer to the long-established regulations of the principal maritime nations. Mr. Lindsay, in his *History of Merchant Shipping*, said that, in Norway and Sweden, masters of ships had to undergo a general examination in shipping affairs, in the customs and navigation laws, and in the foreign exchanges. In Russia and Prussia, they had to show some knowledge both of French and English. In France, a professor, paid by the Government, resided at each of the principal ports, and afforded to all, seeking to be masters in the merchant service, instruction, free of charge, on the different subjects connected with their profession. He claimed the example of France as an argument which, he hoped, would prevail with the First Lord of the Admiralty, and induce him to consider favourably his second proposal. We had organised a considerable force of seamen as a Naval Reserve; but we had not formed a corresponding body of thoroughly trained officers for that Reserve. In the debate on the Manning of the Navy, in 1860, Sir Charles Napier said truly:—

Naval
education
abroad.

‘Suppose you have obtained your Naval Reserve, where would you get officers to command them? You would find it absolutely necessary to come to the merchant service.’

He would not enter, on that occasion, into the question of the general organisation of the Naval Reserve; but he would urge the importance of making the University at Greenwich a connecting link between the Royal Navy and the mercantile marine. Not until its benefits were extended to officers of the merchant service could the College at Greenwich claim to be regarded as a truly national institu-

Increased
facilities to
officers of
mercantile
marine
desiring to
study at
Naval
College.

tion. The lectures were already accessible to merchant officers; but that was not enough. The majority of masters and mates were too poor to be able to give up a year's income for the purposes of study. He would, therefore, propose, that studentships for a certain number of officers of the Naval Reserve should be established at Greenwich. Students should be admitted to residence at the Naval College for twelve months, free of charge, and should receive a sum of not less than 60*l.* a-year. These privileges would enable an officer, who had served in the merchant service in the capacity of mate, to study at the College without pecuniary loss. The studentships should be open for competition to all midshipmen of the Naval Reserve, who could show a sufficient length of actual service at sea. The gradual introduction into the merchant service of officers of higher attainments, who had had associations with the Royal Navy, must be a mutual benefit to the two services, and therefore a public advantage.

We might look to the Greenwich students as men well qualified to serve in the Navy in time of war, while their example and influence in their own service, in time of peace, would tend to raise the general tone of their profession.

SECTION VII.

CRUISES IN THE 'SUNBEAM.'

INTRODUCED AS EXAMPLES OF USEFUL EXPERIENCES IN
NAVIGATION ACQUIRED IN A SMALL VESSEL.

CRUISES IN THE 'SUNBEAM.'

THE following letters to the *Times* and the *Field* are appended to the present volume, as examples of instructive cruising, in which it is extremely desirable that all officers volunteering for navigating duties should gain experience, and which could be carried out at a moderate cost in small vessels with auxiliary steam power.

From the 'Times' of June 2, 1877.

Outline of
voyage of
'Sunbeam'
round the
world.

SIR,—Believing it possible that some interest may attach to the voyage completed on May 27, by the arrival of the 'Sunbeam' at Cowes, I venture to offer to your readers a short narrative of our proceedings. The expedition is in some respects unprecedented; a circumnavigation of 35,400 miles has never before been made in the short period of 46 weeks, from which must be deducted 112 days of well-earned repose in harbour. We had, it is true, the advantage of steam, without which such a performance would have been an impossibility; but we travelled 20,517 miles under sail alone, and the consumption of coal has not exceeded 350 tons. The 'Sunbeam' sailed from Cowes on July 6, called at Torbay, Madeira, Teneriffe, and the Cape Verde, crossed the Line on August 8, and, carrying a favourable breeze in the south-east trades, without even a momentary lull, a distance of 2,500 miles, arrived at Rio Janeiro on August 17. Following the coasts of South America, we visited Monte Video, Buenos Ayres, and Ensenada, steamed through the Straits of Magellan and Smyth's Channel, and reached Valparaiso on October 21.

While on the coast of Patagonia it was our privilege to rescue a crew of fifteen hands from the barque 'Monkshaven,' laden with an inflammable cargo of smelting coals, which had been on fire six days when we most providentially descried her signals of distress.

On October 30, we commenced our long and lonely voyage of 12,330 miles across the Pacific. We touched at Bow Island in the

Low Archipelago, Maitea and Tahiti in the Society Islands, and Hawaii and Oahu in the Sandwich group. On January 21 we sighted Assumption in the Ladrões, and on the 29th arrived at Yokohama. While in Japan we were present at the opening of the railway from Osaka to Kioto by the Mikado, and subsequently cruised in the Inland Sea in severe winterly weather. At Simonoseki we found the people much agitated by the recent outbreak of the Satsuma clan. On February 19, we bade a reluctant farewell to Japan, and, following the most direct route to England, visited in succession Hongkong, Canton, Macao, Singapore, Johore, Malacca, Penang, Galle, Colombo, Aden, Alexandria, Malta, Gibraltar, and Lisbon.

Having given the principal dates, the story of the voyage will be most rapidly completed by entering our successive passages in a tabular statement:—

	Steam	Sail	Total
	Miles	Miles	Miles
Thames and English Channel	193	205	398
Torbay to Madeira	353	874	1,227
Madeira to Orotava (Teneriffe)	164	72	236
Orotava to Tarafal Bay (San Antonio, Oape Verde)	35	886	921
Tarafal Bay to Rio Janeiro	689	2,647	3,336
Rio to Monte Video and Buenos Ayres .	509	712	1,221
Buenos Ayres to Possession Bay (Straits of Magellan)	810	524	1,340
In Straits of Magellan and Smyth's Channel	565	—	565
To Lota and Valparaiso	634	500	1,134
Valparaiso to Yokohama, calling at Hao in the Paumotu Group, Maitea and Tahiti in the Society Islands, and Hawaii and Oahu in the Sandwich group	2,108	10,225	12,333
Yokohama to Kobé and Simonoseki, through the Inland Sea	653	—	653
Simonoseki to Hongkong	395	1,015	1,410
Hongkong to Singapore	312	1,251	1,563
Singapore to Point de Galle, calling at the Straits Settlements	1,608	—	1,608
Galle to Colombo and Aden	2,202	—	2,202
Aden to Suez	807	551	1,358
Suez to Alexandria	436	—	436
Alexandria to Cowes, touching at Malta, Gibraltar, and Lisbon	2,440	934	3,374
Total	14,979	20,300	35,375

Having sketched the voyage in outline, the following details may not be devoid of interest to readers with nautical tastes.

Every yachtsman should be a lover of sailing. In the cruise of

Speed
under
steam
and sail.

the 'Sunbeam,' although expedition was an essential consideration, steam has been used almost exclusively in calms or in narrow waters, or when, as it has often happened, we have sailed at sunset after a hard day's work on board, intending to make an offing during the night and set sails in the morning.

Of the total distance of 15,000 knots under steam, 12,000 were traversed under those special circumstances which seem to justify even a yachtsman in availing himself of the unromantic but invaluable engine.

The best run in twenty-four hours under steam alone was 230 knots, and the most successful continuous performance was on the passage from Penang to Galle, in the week ending April 15, when the 'Sunbeam' steamed 1,451 knots, with a daily consumption of $4\frac{1}{4}$ tons of coal.

The best runs under sail from noon to noon were 298 and 299 knots respectively. The first was on the passage from Honolulu to Yokohama, sailing along the 16th parallel of north latitude, and between 163 deg. and 168 deg. 15 min. east. The second was in the Formosa Channel.

The highest speed ever attained under sail was 15 knots in a squall in the North Pacific.

On 28 days the distance under sail alone has exceeded, and often considerably exceeded, 200 knots.

The best consecutive runs under sail only were :—

I. Week ending August 13, South Atlantic. In the south-east trades, wind a-beam, force 5—1,456 knots.

II. Week ending November 19, South Pacific, south-east trades, wind aft, force 5—1,360 knots.

III. Four days, January 15 to 18, North Pacific, north-east trades, wind on the quarter, force 5 to 9—1,027 knots. The average speed in this case was 10·7 knots an hour.

The following were the average speeds of the longer passages :—

	Days at Sea	Total Distance	Distance under steam	Daily average
1. Cape Verde to Rio	18	Miles 3,330	Miles 689	Miles 185
2. Valparaiso and Yokohama	72	12,333	2,108	171
3. Simonoseki and Aden	37	6,931	4,577	187

The vessel which has carried us so rapidly and safely round the globe merits a brief description. She was designed by Mr. St. Clare Byrne, of Liverpool, and may be technically defined as a composite

three-masted topsail-yard screw schooner. The engines, by Messrs. Laird, are of 70 nominal or 350 indicated horse-power, and developed a speed of 10·13 knots on the measured mile. The bunkers contain 80 tons of coal. The average daily consumption is four tons, and the speed eight knots in fine weather. The principal dimensions of the hull are:—Length for tonnage, 157ft.; beam, extreme, 27ft. 6in.; displacement tonnage, 531 tons; area of midship section, 202 sq. feet.

With an addition of 20ft. to the length, and more engine power, the 'Sunbeam' presents a type which might be found efficient for naval services in distant waters, where good sailing qualities are essential, and large ships are not required.

On looking back, and contrasting the anticipated difficulties with the actual experiences of the voyage, the ease and certainty with which every passage has been made are truly surprising. Our track has been for the most part within the Tropics. The storms off the Cape of Good Hope and Cape Horn have been avoided in the inland passages of the Straits of Magellan and the Suez Canal. We have encountered no continuous stormy weather, except during the four days preceding our arrival at Yokohama. We have suffered discomfort from heat and detention in calms, but storms have disturbed us seldom, and they have not lasted long.

Weather
expe-
rienced.

Our experience of gales include a north-east gale off Cape Finisterre, on the outward voyage; a northerly gale between Rio and the River Plate, a westerly gale off the east coast of Patagonia, short but severe gales on each of the four days preceding our arrival at Yokohama, a severe gale from the north-west in the Inland Sea, a north-east gale in the Formosa Channel, a northerly gale in the Straits of Jubal, a westerly gale off Port Said, and an easterly gale on the south coast of Candia. On the passage homewards from Gibraltar we met strong northerly winds on the coast of Portugal, and a north-east gale off Cape Finisterre.

The navigation has presented few difficulties. All the coasts that we have visited have been surveyed. Lighthouses are now as numerous and efficient on the coasts of China and Japan as on the shores of Europe. Such is the perfection of the modern chronometer, that lunar observations, the only difficult work in ocean navigation, are no longer necessary; and the wind charts published by the Admiralty supply to the amateur navigator accumulated information and valuable hints for every stage of his voyage.

Facilities
for navi-
gation.

How infinitely easy is the task of the modern circumnavigator compared with the hazardous explorations of Magelhaens and Captain Cook, when the chronometer was an instrument of rude and

untrustworthy quality, when there were no charts, and the roaring of the breakers in the dead of night was the mariner's first warning that a coral reef was near!

Our comprehensive and varied cruise has strengthened my former convictions that the disasters due to negligence bear a large proportion to the number of inevitable losses. Every coast is dangerous to the careless commander; but there are no frequented seas where, with the exercise of caution and reasonable skill, the dangers cannot be avoided. These remarks do not, of course, apply to cases of disaster from stress of weather. In fogs there must be delay, though not necessarily danger.

Conduct
of crew.

In these days of lamentation over the degeneracy of the British seaman, my experience may be accepted as a contribution to the mass of evidence on this vexed question. I have not been surrounded by such smart seamen as can only be found on a man-of-war, but I have no ground for general or serious complaint. Many of my crew have done their duty most faithfully. In emergencies everybody has risen to the occasion, and has done best when his skill or endurance was most severely tried—

My mariners,
Souls that have toiled and wrought and thought with me,
That ever with a frolic welcome took
The thunder and the sunshine.

It is always in stormy weather that the good qualities of the British seaman are displayed to the greatest advantage. The difficulty is to keep up his interest and energies in long intervals of fine weather, when nothing occurs to rouse him to an effort, and the faculties of the seaman before the mast, no less than those of his officer, are benumbed by the monotony and isolation from mankind, which are the gravest drawbacks of a sailor's life. It is in these dull moments that men are tempted to drink and quarrel, that officers become tyrannical, and their crews insubordinate, or even mutinous. Lest it should be thought that my impressions of the average sailor are derived from an exceptional crew of picked men, I have only to add that the manning of the 'Sunbeam' was a family job. The sailing master was related by blood or marriage to the majority of his subordinates—fishermen from the coast of Essex, who had received their early training among the banks and shoals at the mouth of the Thames.

Efficiency
of Navy.

In this connection I tender my sincere tribute of praise to the officers of the Navy for their success in maintaining the efficiency

and spirit of their crews through long commissions on foreign stations, much time being necessarily spent in harbour, in many cases in the most enervating climates. The discipline of the service seems to be admirable, and the seamen are reconciled to it by tradition, by early training, and perhaps by an instinctive perception of its necessity.

I am equally bound to commend the efficiency of our consular service in the remotest outposts of civilisation which we have visited; and evidences of good colonial administration are abundantly manifest at Hongkong, Singapore, Penang, Ceylon, and Aden, in the prosperity and contentment of the people.

Colonial
adminis-
tration.

It is scarcely necessary to observe, in conclusion, that experiences may be gathered in a voyage of circumnavigation which are not to be gleaned from Blue-books or from shorter cruises in European waters. A more vivid impression is formed of the sailor's daily life, of his privations at sea, and his temptations on shore. The services required of the Navy are more clearly appreciated after a visit to distant foreign stations.

Lessons
from
voyage.

Such a voyage is, indeed, a serious effort. It demands many laborious days and anxious nights of watching. For my safe return to 'those pale, those white-faced shores,' so welcome to the homeward-bound, accompanied, happily, by the adventurous little family who have taken part in the expedition, I am truly thankful.

I am, Sir, your obedient servant,

THOMAS BRASSEY.

Cowes.

From the 'Field,' February 5, 1881.

THE 'SUNBEAM' IN THE BAY OF BISCAY.

SIR,—A gale of wind is an incident of such ordinary occurrence in a passage across the Bay of Biscay in the month of January, that I cannot venture to attribute an exceptional degree of interest to our latest experiences in the 'Sunbeam.' To the yachtsman, however, there are valuable lessons in every tempest; and, as the north-east gale which swept across the bay on the 22nd of this month was the most severe that I have witnessed in numerous and extended cruises during the last nine years, I offer to my brethren in the pleasure navy a short epitome of my log.

Gale of
wind in
Bay of
Biscay.

We weighed in Portsmouth Harbour on January 20, at 3 P.M. Our decks were covered with frozen snow, and as we steamed out to

Spithead, the Isle of Wight was dimly visible through a thick fog. The weather cleared as we reached the Needles; and the green downs of Freshwater and the red cliffs of Alum Bay—scenes so familiar to yachtsmen in the balmy months of summer—presented a novel aspect of beauty in their winter robe of snow, enriched by the equal tints of sunset.

Having gained a good offing in the Channel, we made sail to favourable breezes from the south-east. In the afternoon of the 21st, as we were nearing the north coast of Brittany, the sea was smooth, the sky wore a settled appearance, and the barometer was steady at 29.97. At 7 P.M., or twenty-seven hours after leaving Portsmouth, the north-west light on Ushant bore south-east, distant four miles.

After rounding the island the wind freshened rapidly, and at 11 P.M. a fierce gale had commenced from the east-north-east, with little warning from the slight fall of the barometer to 29.93. We proceeded promptly with the usual preparations for bad weather. Heavy boats were secured on deck, flying kites were taken in, lower sails were reefed, skylights were protected with canvas.

At midnight, in a thick squall of rain, the look-out man reported a green light on the port bow, and in a few moments more, cried 'Hard a-starboard!' The helm was put down, while I rushed forward to reconnoitre, and the 'Sunbeam,' coming suddenly to the wind under a press of sail, plunged into a heavy sea, and the jib-boom was carried away. In a few moments more the light was made out to be the masthead light of a steamer, and we bore away on our course, steering to the south-west.

The broken spar was secured, and as the night advanced, top masts were housed, and all fore-and-aft sails, except the mainsail, were close reefed. At daylight we were scudding under mizen trysail, whole mainsail, double-reefed foresail, and storm squaresail. In the forenoon the gale was at its height, and we were running at from thirteen to fifteen knots, rolling deeply, and taking in large quantities of broken water in the waist. The 'Sunbeam' carries 75 tons of lead ballast, which lowers the centre of gravity, and aggravates the tendency to roll.

As the gale continued the seas became more threatening, and I thought of a conversation I had had at the last dinner of the Navy Club with Admiral Blake, in which he repeated to me the statement he had made to the Committee of Inquiry into the loss of the 'Atalanta.' When in command of that vessel, in heavy weather, he followed the advice which he had received from Sir Thomas Hardy, and steered

so as to keep the wind and sea about four points on the quarter. The result was that the ship rolled deeply, but quickly recovered herself, always flying before the wind with the fleetness and buoyancy of a bird. We found the 'Sunbeam' behaved best when steered with the wind two points on the quarter, so as to keep the fore-and-aft sails full and drawing. The press of sail steadied the vessel and increased the speed. When a heavy sea was seen rushing upon the quarter or the beam, we bore away for an instant straight before the wind and came to, after the wave had passed ahead.

With skilful steering, nothing went wrong for several hours, until shortly before noon, when the sea became more ugly than ever. About this time the crests of some mountainous waves broke over the lee quarter, and two helmsmen in rapid succession were knocked down at the wheel and washed into the lee scuppers. Once, and once only, the vessel broached to, bringing the wind nearly on the beam. It was the work of a few moments, but it was attended with a disastrous consequence; the squaresail was taken aback and torn from the bolt ropes, thus depriving us of a most important sail. No time was lost in setting the double-reefed square foretopsail. It was a good piece of seamanship, which had been delayed too long. The lofty sail had a telling effect in increasing both speed and steadiness. We shipped much less water and steered more easily.

At noon we passed close to a large screw steamer, forcing her way slowly through the waves, head to wind. The bow was constantly buried in volumes of broken water, which were discharged from the scuppers in copious cascades. In the afternoon the gale had begun to break, the barometer was rising, and the seas were longer. The gradual abatement of the storm was a welcome relief, after the strain and tension of many hours of arduous conflict with the elements. It left us free to contemplate and admire the sublime and noble aspect of the storm-tossed ocean. At 8 P.M. we had logged 312 knots, or 360 statute miles, in twenty-four hours after rounding Ushant, giving an average of thirteen knots, or fifteen statute miles an hour.

The remainder of the voyage presented no special features. We gave a wide berth to Cape Finisterre, and ran down the coast of Portugal in two days, making the Burlings exactly three days after rounding Ushant. We met the usual heavy swell from the westward, but the weather was otherwise favourable.

After rounding St. Vincent, we encountered a gale from the south-west. We made the entrance to the Straits with some difficulty in thick weather, and at 8 P.M. on the 26th anchored off Algeçiras, in six days and four hours from Portsmouth.

In conclusion, a few words of praise are due to my sailing master, Mr. Kindred, whose duties under an amateur commander are necessarily far more comprehensive and responsible than those of an officer subordinate to a professional seaman. Of my crew it is just to say that no mariners could have worked better. In these days we hear much depreciation of the British seaman. My experiences, renewed year by year, and extending over more than a quarter of a century, have given me a more cheering impression of the brave and skilful men, who have done me excellent service.

My last word shall be a tribute of praise to my little company of passengers. They had many sufferings to endure. The nursery, so called, was deluged with water, but not a murmur rose from its plucky young occupants and their attendants. The ladies, who were more conscious that a great storm was raging, never lost heart. Indeed, it may be recorded with truth that all on board made a worthy effort to do their duty.

I add, in a tabular form, the main details from our log.

THOMAS BRASSEY.

'Sunbeam,' R.Y.S., Gibraltar, Jan. 28.

Portsmouth to Gibraltar.

Date	Sail	Steam	Total	
Jan. 21 .	56	129	185	Rounded Ushant
" 22 .	208	—	208	—
" 23 .	240	—	240	—
" 24 .	144	—	144	Made the Burlings
" 25 .	85	60	145	Rounded St. Vincent
" 26 .	106	108	214	Anchored off Algeçiras
" 27 .	15	65	80	Moored inside New Mole, Gibraltar
	914	362	1,276	

The 'Field,' October 22, 1881.

THE 'SUNBEAM' IN A GALE OFF FLAMBOROUGH HEAD.

SIR,—The columns of the press have been filled with tales of disaster by sea and land, caused by the recent hurricane. As a relief to these melancholy narratives, I offer a description of our experience in the 'Sunbeam.'

After attending a public meeting at Middlesborough, I embarked in the 'Sunbeam' on the evening of Thursday, the 13th inst.,

Gale of
October
14, 1881.

intending to sail for Portsmouth on the following morning. I was called at 5 A.M.; but, finding the wind from the south and the barometer depressed, I determined to defer our departure. At 9 A.M. the barometer had fallen to 28·87, but as the wind had changed to W.N.W., and was off-shore from a favourable quarter, I determined to proceed to sea. We were towed down the Tees, and as we descended the river I conferred with the pilot as to what we might anticipate from the remarkable depression in the barometer. He was of opinion that a severe gale was at hand, but that it would blow from the north-west, and that there was no reason for remaining in port. The tug was accordingly cast off at the mouth of the Tees, and we made sail. Foreseeing a storm, topmasts were housed, boats were secured on deck, and we proceeded under close-reefed canvas, setting the main and mizen jib-headed trysails, double-reefed foresail, and forestaysail, and reefed standing-jib.

As the day advanced no change took place in the weather. The wind blew strongly, but not with the force of a gale, and the sea was comparatively smooth. Meanwhile, the barometer continued to descend rapidly, and at 2 P.M. had fallen to 28·45. As nothing had yet occurred to account for this depression, the navigating officer remarked that the fall must have been caused by the heavy showers of rain which had fallen in the course of the morning. I knew from my former experiences that it was not the rain, but the coming storm, that was indicated by the barometer. It had needed some resolution to quit the mouth of the Tees in the morning, and at mid-day, when we were off Whitby, a still greater effort was required to resist the temptation to make for a harbour.

No further incidents occurred until 3 P.M., when we were nearing Flamborough Head. Here we were at last overtaken by the long-impending storm. Looking back to the north-west, over the star-board quarter, we saw the sea lashed and torn by a furious wind into a mass of white foam. The hurricane was rushing forward with a velocity and a force which must have seemed terrible to the fleet of coasting vessels around us. Before the gale struck the 'Sunbeam' our canvas had been reduced to main and mizen trysails and reefed standing-jib; but even with this small spread of sail, and luffed up close to the wind, our powerful little vessel careened over under the crushing weight of the blast until the lee-rail completely disappeared under water—an incident which had never previously occurred during all the extensive voyages we have undertaken. Such was the force of the wind that every sailing vessel near us lost all her sails, and our large gig was stove-in from the tremendous pressure of the gunwale

against the davits. We took in the jib and the mizen trysail, and, with our canvas reduced to a jib-headed main trysail, we were soon relieved of water on deck.

For an hour and a half we lay-to on the starboard tack, standing in for the land below Burlington Bay. We were battened down, and felt ourselves secure from all risks except collision. The fury of the wind so filled the air with spoon-drift that we could not see a ship's length ahead, and in such crowded waters a collision was a far from impossible contingency. At 6 P.M. we thought it prudent to wear, so as to gain an offing during the night, and gradually drew out of the line of traffic along the coast. At 9 P.M. the extreme violence of the hurricane had abated, and we could see, through occasional openings in the mist, the masthead lights of several steamers, standing, like ourselves, off the land for the night. At midnight we saw the blue sky and starlight overhead; the barometer was rising rapidly, and the wind gradually settled down into a clear hard gale. It was accompanied by a heavy sea, running down the coast from the north; but we shipped no water, and passed the remainder of the night quite as comfortably as the circumstances of the case permitted. We were uncertain as to our position, and the state of the atmosphere was such that we could not venture to scud until daylight.

At 6 A.M. we carefully examined the dead reckoning, and, having fixed on an approximate position, we determined to bear away, steering to pass in mid-channel between the Outer Dowsing and the Dudgeon, through a passage about ten miles in width. We were under easy sail, but, under the main trysail, double-reefed foresail, staysail, fore topsail, and reefed jib, we scudded at the rate of eleven knots. A constant look-out had been kept from aloft, and at 10 A.M., having nearly run the distance down from our assumed position when we bore away to the northward of the Outer Dowsing, I established myself in the cross-trees until we should succeed in making something. After a short interval we saw broken water nearly ahead on the port bow. We at once hauled to the wind, steering to the south-west, and set the mizen trysail. The lead showed a depth of ten fathoms, and we were therefore assured that we had been standing too near to the Outer Dowsing. The indications afforded by the lead were confirmed by sights, somewhat roughly taken, and by the circumstance of our having shortly before passed through a fleet of trawlers, evidently making for the Spurn. In less than an hour after we had hauled to the wind we found ourselves in the track of several steamers. At 3 P.M. we made the

land near Cromer, and at 5.30 we brought up in Yarmouth Roads, thankful to have gained a secure shelter from the gale.

As we stood away into safety we saw, with a shudder, a small schooner on the further side of the Outer Dowsing steering directly towards the breakers which we had avoided by keeping a good look-out. We had no means of reaching the vessel, or giving a warning; and I can only hope that those on board were aware of their danger before it was too late to avoid it.

I have since heard with regret of the extensive damage to vessels less able to contend with such a hurricane than we ourselves had been. Overloading, worn-out sails, insufficient crews, dilapidated hulls, want of care in navigation—these are preventable causes of disaster; and, in spite of our recent legislation, they still extensively prevail. In the present case the losses would have been far more serious had the wind shifted to the north-east, and blown on shore with the same fury as it actually did off the land. The day is not far distant when the coasting trade of this country will have passed almost entirely into steam vessels. The change will certainly tend to diminish the loss of life at sea.

Causes of
loss at sea.

To my brother yachtsmen I venture to offer in a few words the result of a gradually accumulated experience of heavy weather at sea. As a general rule, our pleasure fleet is overmasted. We are advised in these matters by sail-makers, who have little personal experience of the sea; and who look to the Solent and its sheltered waters as the normal condition with which we have to deal. When we venture forth from that smooth and too-much frequented arm of the sea into open waters, our vessels have to pass a far more severe ordeal, and they do not always come out of it to our satisfaction. Many are compelled to stay in harbour when a passage might have been made in a snugly-rigged yacht. In threatening weather constant observation of the barometer cannot be too strongly insisted upon. It will always give warning in time to take in canvas, secure boats on deck, and batten-down dangerous hatchways, before the storm has reached its height.

Over-
masting.

THOMAS BRASSEY.

Normanhurst Court, Battle, Oct. 20.



PART VII.
RETIREMENTS AND PENSIONS.

*NAVAL OFFICERS IN THE CONSULAR
SERVICE.*

HOUSE OF COMMONS,
JUNE 10, 1873.

**SPEECH ON MOVING AN AMENDMENT TO SIR JOHN
HAY'S MOTION ON PROMOTION AND RETIREMENT
IN THE NAVY.**

In the House of Commons, Tuesday, June 10, 1873.

(Extracted from Hansard's 'Parliamentary Debates,' vol. ccxvi.)

MOTION made, and question proposed,

‘That a select committee be appointed to consider the present system of promotion and retirement in the Royal Navy, and to report their opinion thereon to this House.’—(*Sir John Hay.*)

**Evils of
half pay.**

Mr. T. BRASSEY: Before I proceed to speak to the amendment which I have placed on the paper, I desire to explain that if the forms of the House had permitted, I should have preferred to present my amendment as an instruction to the committee for which the hon. and gallant baronet (Sir John Hay) has moved. My object, however, will have been sufficiently attained if I can succeed in calling the attention of the House to the proposals which I am about to make. The efficiency of the Navy cannot be maintained if discontent prevails throughout the service. The enforced idleness to which so many naval officers have hitherto been condemned, would, under any circumstances, be a fruitful cause of discontent, and from every point of view it is a great evil. The origin of the difficulty is not far to seek. It has been our policy to train up, in time of peace, a number of officers sufficient to command our fleets in time of war; but, having trained these officers, it is impossible to find employment for them in a peace Navy. It has long been an accepted axiom that the number of lieutenants must be taken as the datum line upon which the lists of officers in the other ranks of the service must, to a great extent, be determined. As to the number at which the list of lieutenants should be maintained, the Select Committee on Naval Promotion and Retirement of 1863 expressed an opinion that, including lieutenants in the Coast Guard and other services, 1,000 is the

lowest number to which the active list of lieutenants can be prudently limited. While insisting on the necessity for so large a number, they fully recognised that the promotion of all the lieutenants on the list was impracticable. By the recent Order in Council, the number of lieutenants has been fixed at 600; but without offering an opinion as to the wisdom of that reduction, it is sufficient for my present purpose to observe that the importance of finding employment is equally great, whatever be the actual numbers with which we have to deal, so long as a large proportion of the officers of the Navy are pining away in poverty or idleness on a miserable half-pay.

For the purpose of maintaining the list of lieutenants at a number sufficient to meet the emergencies of war, it has been the practice of successive administrations to enter a far greater number of cadets than it has been possible to promote to the higher ranks of the service. When 200 cadets were entered in every year, and only seven officers were promoted to the flag list, it is clear that a considerable number of cadets were doomed to disappointment. As they rose in the service it became more difficult to obtain employment. But, discouraging as are the prospects of the majority of the cadets who enter the Navy, the Admiralty is always beset with urgent solicitations from parents and friends for nominations to cadetships. This demand must be attributed to the desire of parents to obtain for their sons the advantage of the gratuitous education which is given to all-comers who aspire to become officers in the Navy. I strongly object to the principle of tempting parents in narrow circumstances, by the offer of this gratuitous education, to send their sons into a profession which is so ill adapted for those who have not the advantage of some independent resources.

It has been urged by the most eminent officers that our naval cadets should be educated at a college ashore. But such an institution should be self-supporting, and the boys should be required to pay for their education in the same way as those who are trained for the Army at Sandhurst, and for every other profession. In support of this view, I may quote the opinions of Admiral Cooper Key, the Duke of Somerset, and many high authorities on naval subjects. If any exception be allowed to the rule requiring payment for the education of a cadet at a naval college, it should be limited to the sons of naval officers.

Passing from the nomination and the education of cadets, we have now to deal with the more difficult problem of finding the means of employing and promoting a body of lieutenants whose numbers, even under the reduced scale laid down in the Order in

Employment and promotion of lieutenants.

Council prepared by my right hon. friend (Mr. Childers), are considerably in excess of the ordinary requirements of a time of peace. Nearly one-third of the lieutenants are now on half-pay. Various means can doubtless be suggested for dealing with the case of these officers. The propriety of allowing lieutenants more leave on half-pay than they at present enjoy deserves consideration. Naval officers after a long commission abroad, or when invalided home from a foreign station, are as much entitled to the privilege as the officers of the Army. After an absence of four years, a year's leave on full-pay cannot be considered an over liberal allowance. Under the existing regulations, an officer does not enjoy more than six months' leave on full-pay in the first ten or fifteen years of his service. But an adequate promotion, as well as employment, is required for deserving lieutenants; and in order to secure a sufficient flow of promotion, the number of officers in the superior ranks of the Navy is maintained at a standard considerably in excess of the ordinary requirements of the service. This plan of rewarding good service in the Navy is of old date. In 1816, at the conclusion of the war, lieutenants' commissions were given to all mates of above two years' standing. More than 1,000 lieutenants were then made. In the French Navy, no officers on the active flag list are without employment. In the United States Navy, all the officers of lower grade, and almost all the admirals, are employed. But with us, in consequence of the disproportion between their numbers and the amount of employment during peace, the commanders and captains are not employed at sea on an average more than one-third of their time; and in the case of the flag officers, the proportion of time on half-pay is infinitely greater. It is unnecessary to dwell on the insufficiency of the half-pay. A naval officer without private means cannot maintain a social position commensurate with his rank in Her Majesty's service. On the other hand, the total amount of the non-effective Naval Vote is already so portentous, that no considerable permanent addition to that vote could be entertained. Something might be done for the commanders and captains, both to improve their position in a pecuniary sense, and to give them more frequent opportunities of serving at sea, by employing commanders in lieu of first-lieutenants and captains in commanders' commands. But there is another means of relieving the overcrowded lists, to which I desire more especially on the present occasion to call attention. My proposal is that civil employment, of a kind for which naval experience is a fitting preparation, should be offered to officers for whom it is impossible to provide occupation afloat.

There are two branches of the public service for which naval officers are thoroughly adapted. I mean the consular service at foreign ports, and the surveyorships of shipping, under the Board of Trade, at home ports. The post of consul at a foreign port can scarcely be regarded as a diplomatic appointment, though, if it were, I should be prepared to maintain that a well-selected naval officer would be as fit as most other men who would be available for the service. For the general business of a consular office, nautical experience is an excellent preparation. The most important transactions with which our consuls at ports abroad are accustomed to deal are connected with ships or sailors. When a British ship is wrecked abroad, and an application is made to the consul for assistance, it is obvious that he would be better prepared to act in such an emergency, if he were himself an experienced sailor. The other class of civil employment to which I have referred is that of the surveyors of shipping under the Board of Trade. Some considerable technical knowledge of shipbuilding would be required in order to perform these duties; but it is a knowledge which a sailor would readily acquire. Character, indeed, is at least as essential as technical knowledge; and at present the salaries are so inadequate that it is difficult to induce men to enter the public service in this department, whose social position makes them independent of every kind of influence. If naval officers were appointed, their professional associations would make them superior to temptation; and with their half-pay in addition to their salary under the Board of Trade, their positions would, without additional expense to the country, be made more satisfactory than those held by the majority of the existing body of surveyors. These surveyorships and consular appointments would offer a wide field for naval officers unable to find employment in their own profession. The surveyors under the Board of Trade are not a numerous body, but their number may probably be increased in order to provide for that more active supervision of our shipping, which, whatever be the form which it may ultimately take, seems to be impatiently demanded by public opinion. The withdrawal of so many officers on half-pay from the active lists would have the effect of giving increased employment to those officers who continued to serve exclusively in the Navy, thus adding materially to their efficiency. The advantage of this more frequent employment has been strongly insisted on by our best officers.

In conclusion, I would refer to a field of employment in which naval officers judiciously selected would find it in their power to render services of great value. For the Royal Naval Reserve a

Naval officers should be employed in the consular service.

Officers required for the Naval Reserve.

staff of naval officers is absolutely essential. The discipline, the drill, the organisation, the appliances for instruction, of the Royal Naval Reserve have hitherto suffered from not being placed under the close and constant supervision of a sufficient naval staff. An admiral at the head of the Reserve is required at Whitehall; a lieutenant should be present during the drills on the gun-deck; captains should be appointed to superintend the general organisation in their several districts, and to combine the varied resources of the mercantile marine in an effective manner for the local coast defence. The value of the Naval Reserve has been sometimes called in question. If the Reserve is not all that it ought to be, it is because we have hitherto neglected to supply the means by which the force may be more perfectly organised. A very different spirit has prevailed in the organisation of our Reserves for the land service. Distinguished general officers were appointed as inspectors, supported by a vast array of colonels and adjutants. But hitherto the entire burden of organising the Naval Reserves has been cast upon a member of the Board of Admiralty already overtasked by his other duties. The hon. gentleman concluded by moving the amendment of which he had given notice.

Amendment proposed, to leave out from the word 'consider' to the end of the Question, in order to add the words 'how far naval officers on half-pay can be more generally employed in the consular service, and in the numerous appointments under the Marine Department of the Board of Trade,'—(*Mr. Thomas Brassey*),—instead thereof.

Question proposed, 'That the words proposed to be left out stand part of the Question.'

Mr. GOSCHEN said that the Government were so anxious to find increased employment for the officers, if possible, and also to give further inducements to retire, that they would accept the amendment of the hon. member for Hastings (*Mr. Brassey*), and there being no difference of opinion as to the necessity of dealing with the case of the unemployed officers, he trusted the hon. baronet would not divide.

Sir JOHN HAY offered to withdraw his motion provided the committee would have the power to inquire why the necessity for finding additional employment for officers had arisen.

Mr. GOSCHEN declined to agree to such an understanding.

Question put.

The House divided:—Ayes 64; Noes 81. Majority 17.

Ordered, that a Select Committee be appointed to consider 'how far naval officers,' &c.

APPENDIX.

ARMY REORGANISATION COMMITTEE.

EVIDENCE BY THE COMPILER.

ARMY REORGANISATION COMMITTEE.

THE main principles upon which the Reserves should be organised must be in many essential points the same, whether for the Army or the Navy.

The Compiler having been examined by the Horse Guards Committee on Army Reorganisation, it is thought that the evidence given may be appropriately introduced, in connection with the preceding Parliamentary speeches on the Naval Reserve.

Wednesday, July 23, 1879.

Present :—General LORD AIREY, G.C.B., President ; General Lord Napier of Magdala, G.C.B., G.S.C.I. ; General Sir J. L. A. Simmons, G.C.B., Inspector-General of Fortifications ; Lieutenant-General the Earl of Longford, K.C.B. ; Lieutenant-General Sir P. L. MacDougall, K.C.M.G. ; Lieutenant-General J. W. Armstrong, C.B., I.G.A.F. ; Lieutenant-General Sir H. W. Norman, K.C.B., C.I.E. ; Major-General Sir A. Alison, Bart., K.C.B. ; Colonel W. B. Saunders, R.A. ; Colonel H. P. Hutton, 30th Regiment ; Colonel T. S. Bigge, 5th Fusiliers ; Colonel E. H. Clive, *Secretary*.

T. Brassey,
Esq., M.P.,
and H.
Harrison,
Esq.
July 23,
1879.

THOMAS BRASSEY, Esq., M.P., and HENRY HARRISON, Esq., examined.

(*Chairman to Mr. Brassey.*) As you have shown great interest in the affairs of the Army, amongst other subjects I should like to know if you have any suggestion to make or any memorandum prepared with regard to your opinion upon the state of the Army now?—I take an interest in the Army as every Englishman ought to do, but I cannot claim to have studied the conditions of the service specially. I have, as your lordship is aware, devoted considerable attention to naval administration ; but to military administration I have not given any special attention. There were two points which I thought I might venture to submit as suggestions ; the first was a suggestion

as to the possibility of creating a Reserve without involving the necessity of short service with the colours. I have had considerable experience in former years as a Volunteer officer, and it has occurred to me that it might be possible to create a Reserve for the Army upon the Volunteer system. There are certain corps of Volunteers which fully meet the original conception of a Volunteer Force, corps which are quite independent of any grant or subsidy from the Government, and which could only be retained in connection with the Army upon that voluntary basis; for example, the Barristers', the Artists', and the Post Office corps. With regard to corps of that kind I think you could hardly change their constitution. But there are large bodies of Volunteers who, I think, might possibly be made more efficient than they are, with further assistance from the Government; and I believe that, in consideration of that assistance being given, you might anticipate greater efficiency in drill, and also induce the Volunteers to undertake a more direct and distinct engagement to serve in case of need. I will give what has occurred in my own experience. I was for several years connected with the Cinque Ports Artillery Volunteers, and in my own village we raised a body of 70 men for the artillery branch of the Volunteer Service; they were fairly efficient; they were, in fact, good Volunteers; but I often used to ask myself whether these men could not be made more efficient for the Reserve if the Government were to undertake to pay them for their Volunteer service? I throw that out for discussion. Supposing it had been required that instead of the minimum drills to constitute an efficient being 30 or 35, it should be 100 drills per annum; and supposing that the Government, in consideration of the Volunteer undertaking a more distinct engagement of service than he now undertakes, had offered to give him a shilling a drill for every attendance, subject to efficiency, I think you would have secured the full number of attendances that you required, and that you would have had a greater hold over the men, and better guarantees than we now possess of efficiency. These results would be attained at a comparatively small increase upon the cost of the Volunteer Force, and a very small cost indeed per man, as compared with the cost of men actually with the colours. I believe that, in consideration of a payment, such as I suggest, of a shilling a drill, not only would the men have undertaken to attend the number of drills and to become efficient to the satisfaction of the military authorities, but that they would have undertaken an engagement as onerous as that undertaken by the men who now serve for two years with the colours and afterwards go into the Army Reserve. It occurs to me that men who are the cream and flower, you may

Proposal
for drilling
Militia
under
arrange-
ments
similar
to those
for Volun-
teers.

say, of the working class are deterred from joining the Army by the nature of a soldier's life in time of peace. You cannot make the barrack-room other than it is, and there is the separation from home, and there are a number of privations to be endured. Now supposing the idea that I indicate could be carried out, the soldier would have the military instruction which you wish him to have to qualify for the Reserve, and he would not have to face the separation from home, and the barrack life, and enforced intimacy with undesirable companions, or with people whom he may consider undesirable companions. Under the arrangements I propose none of those numerous difficulties would present themselves to deter a man from joining. On the other hand, the taxpayer would have the advantage of only paying 100s. a year instead of the much larger sum he has to pay to a man who serves in the regular way with the forces. There is one other suggestion that I would venture to make; it is in a different line, but I will mention it now if you wish.

Payment
by results.

Will you please do so?—The cardinal principle of my father's successful administration of the labour question was the principle of piecework, or payment by results. No labour was so expensive as that which was paid irrespective of results, and that would apply to all countries. Now, one is struck at once with the immense difficulty of applying the principle of piecework to the service in the Army, and that difficulty almost destroys any possible analogy between civil labour and military labour. I have been thinking how far there might be any possibility of establishing motives to action in military service similar to those you create in civil labour by the principle of piecework. The idea at once presents itself that you encourage zeal and efficiency in the ranks of the Army most effectively by the opportunities that you give to men of obtaining advancement to the grade of corporal or sergeant. That is, to a certain extent, payment by results; and so too the good-conduct stripe, with the little honorarium which it carries with it, is another development of the same idea. I do not know what the conclusions of this Committee may be with reference to the pay of the Army generally, but I venture to think that if it should be proposed in any way to improve the position of the soldier it would be desirable to retain the present conditions with regard to men first joining, and to propose improvements only to men upon their re-enlistment for a second term with certificates of good conduct and efficiency in drill. You might introduce the principle of payment by results by saying that upon fulfilling a certain term of service and re-engagement there should be

a prospect of improvement; and if a man is worth more on engaging for a second term, because he has in his first term of service shown good conduct and efficiency in drill, *à fortiori* he would be worth more on re-engaging for a third term, always assuming that re-engagement would only be permitted to efficient and well-conducted men. I am sure that in military administration the principle of payment by results is a valuable principle, quite as valuable as it is in civil life; the only question is how to apply it in the best way.

There is another matter that occurs to me that I venture to mention. I am pretty well acquainted (though not so well acquainted as his lordship near you) with the condition of a soldier's life at Gibraltar and Malta. We know that garrison life, extending over some years subject to the heat of a southern climate in the summer, is trying to an English constitution, and we know that in the case of the officer he is enabled to bear with the exigencies of the service by a period of leave of six months every other year, and that he has opportunities of enjoying himself with the Calpe hounds and in other ways, all of which are denied to the private soldier. I have been told that to the men in the ranks long residence in those garrisons is a life of great monotony, and that the climate is trying. The question, therefore, has occurred to me, long before I was summoned to this Committee, whether you might in any way, without putting great expense on the country, mitigate the conditions of the private soldier's life in those garrisons. We see an enormous amount of British steam tonnage calling at those ports every day coming from and going to the mother-country, and it has often occurred to me, as a matter well worthy of consideration by those who have to administer to the Army, how far it might be possible to make use of that resource, at a comparatively small cost, for the purpose of making a more frequent interchange of men as between the healthy region of Aldershot and the more trying climate of Gibraltar and Malta. I cannot help thinking that without imposing the immense cost of special transport ships upon the Estimates something might be done in that direction. Of course the details require very careful consideration.

Relief to
garrisons
in Mediter-
ranean.

Have you formed any idea in your own mind of what the value of a soldier's condition is, taking into account his pay, his accommodation, his fuel and light, and his schooling and medical attendance when not well?—No, I have not valued that. I think that the result of the labours of the recruiting sergeant are a very good criterion upon that point. If recruiting goes on briskly I think we may be quite satisfied that the terms which are offered compare favourably

Pay.

with what is open to the individual in other branches of employment. If, on the other hand, recruiting goes on slowly, we may be quite sure that it is because the terms appear less advantageous. There is always this to be borne in mind, that men in civil life, men of a desirable class, would be deterred from joining the Army by circumstances which are inseparable from a soldier's life, and circumstances which would not be in the least mitigated by any increase of pay. The monotony of the life under certain conditions, the enforced companionship in the barrack-room with men with whom you do not want to associate so intimately, and other circumstances inseparable from a soldier's life in time of peace, would remain whatever pay you gave. Those circumstances disappear upon active service, and when I ventured to throw out in the early part of our conversation the idea of creating a Reserve upon the basis of the Volunteer Force I had this circumstance in mind, that the reservist would be instructed in his drill and have military instruction without having to bear any of the disadvantages which I think would weigh with many men and deter them from entering the ranks.

Pensions.

Do you think, with regard to that class of men, that the expectation of a future retirement at a more advanced pay in the shape of a pension does not make an impression upon them?—It makes an impression upon the man as he advances in life. With the young fellow of sixteen, seventeen, or eighteen, whatever the age at which he enters as a recruit, I think it weighs very little. Upon that point I would venture to remind the Committee that there has been some very interesting evidence in the Blue Books bearing upon the pension question for the Navy. The general effect of the evidence was that the pension became more and more a thing valued and appreciated in proportion as you approach the time when you would begin to enjoy it.

If we can, by the adoption of any measure, encourage in any way men prolonging their service, of course it would be combined with the idea of a pension?—Yes. I suppose if you want to recruit briskly, the country would make a more advantageous bargain by giving the whole benefit in the shape of a weekly wage, rather than by saying that the soldier shall have a certain weekly wage with the prospect of a pension. If a man is debating whether he shall yield to the recruiting sergeant's solicitation or not, he probably attaches very little value to the pension; but when he has served in the Army and become more serious and is considering whether he shall remain for a longer period of service in the Army or not, and has acquired military ideas and military habits, I cannot doubt that in that case

the pension would be of value. I think it would weigh very much more with the sergeant in debating whether or no he should leave the Army and enter into civil life than it would with the recruit on first joining.

That is very much in accordance with other evidence that we have received that at that early age the recruit does not take into great consideration the question of his after life?—I am aware that in the case of those joining the Navy it is not considered that the pension is very much esteemed. Mr. Lucas, who will follow me, will I think speak to your lordship with reference to the great importance in the administration of civil labour of having good foremen; he will tell you that to have good foremen is a matter of the utmost importance in carrying out large civil undertakings. The analogy of the good foreman to the good sergeant is complete, and Mr. Lucas will tell you that a good foreman is worth a very handsome wage; and by analogy I should say that the position of the non-commissioned officers in the Army ought to be made as desirable as possible. Of course it must be a much less costly thing to offer considerable improvements of position to a comparatively limited body of men, such as the non-commissioned officers, than it would be to make a very small advance in the rate of wages of the rank and file. ‘Hope springs eternal in the human breast,’ and every man in the ranks who is of value would of course entertain the hope of, sooner or later, arriving at the grade of a petty officer, so that it would influence beneficially the conduct of a great number of men if a comparatively limited number of petty officers found their position improved.

Position
of non-
commis-
sioned
officers.

What do you consider is the longest service that a man can remain what we call with the colours, without doing him harm with reference to civil life afterwards, in finding employment? At present you know it is six years with the colours and six with the Reserve. The great object with us is to expand the Army as much as possible, and at the same time not to injure the man with regard to finding occupation in civil life; and I should like to know what you think as to the effect upon getting employment in civil life of remaining with the colours?—I think that any period of service with the Army sufficiently long to qualify the recruit as a soldier does interfere with his prospects in civil life in a great number of employments, especially in those employments which require a long apprenticeship. In all those skilled trades where an apprenticeship of five or six years is required, during which period the emolument or pay must be small, a man is more or less disqualified by service, however short, with the

Service in
the Army.

Occupations in
civil life.

Army, and that is the reason why I think it would be so desirable, if possible, to create a Reserve from men who would not be disqualified from serving their apprenticeship in a trade by their drills and instruction in military duties. The Naval Reserve has been created from a body of men who receive their instruction without interfering with their ordinary employment. The Naval Reserve man is, I believe, perfectly efficient as a reservist for the Navy with twenty-eight days' drill a year, which amount of drill he is able to put in without interfering with his ordinary employment. No doubt there is this difference between the seaman and the man employed on shore, that the seaman comes home periodically, he is paid off, and he waits a certain interval of time before he joins his next ship. During that interval the alternative is between drill for a limited number of hours on board the drill ship, and idleness, and debauchery it may be, on shore. He is therefore able to put in this number of days of drill in the year without interfering with his ordinary employment. It would obviously be more difficult for the carpenter or navvy or any man of that class to put in his drill for the whole days to the number of twenty-eight, but if it could be arranged that he should be instructed, as the Volunteers are, during hours which interfere as little as possible with ordinary employment, it seems to me that you could then work to a certain extent upon the same system which has been adopted in the case of the Navy for the purpose of creating a Reserve,

Period of
service.

But as regards the mere recruits and young soldiers, what is your opinion as to the best division of the twelve years; would you have it six and six as it is now, or nine and three, or three and nine, or eight and four; which do you think is best?—I really have not sufficiently considered the subject to be able to offer to the Committee an opinion which would be of value. I cannot help thinking that whatever the nature of the civil labour which the man is designed to follow in after life, his period of service in the Army is to a certain extent a disqualification. It depends of course very much upon the employment which the individual is to take up in later life. Now, for example, take the case of the railway service; there are a vast body of men employed as porters in the goods department, and in fact in the whole railway service other than that which is technical, such as the locomotive service, and so on; I consider that a couple of years in the Army is positively a good training for that kind of employment. And I may tell you in order to establish that point that the Coastguard on the coast of Sussex, the neighbourhood in which I live, after having been in the Navy as boys, and afterwards

for a period of ten years as able seamen, looked to the alternative of railway employment as a sure resource on retirement from the Navy. I know as a matter of fact that in the division within the limits of which I live at Hastings, they proceed with wonderful regularity on the completion of their term of service in the Coastguard to Ashford station and there procure engagements as railway porters. It is, I think, where you want manual skill, as in the case of the carpenter or the mason, that service in the Army is a disqualification. And again, I should say that, although it is not a skilled trade, the hard physical labour of the railway navy, heavy digging, and so on, would be a kind of life that would not come very gratefully to a man after a term of service in the Army. But there are, no doubt, very large spheres of employment for which service in the Army is not only not a disqualification, but positively a qualification and a preparation. I remember that when I went to read in chambers after preparing for the bar, two or three of the copying clerks in the service of the barrister with whom I was reading had served as non-commissioned officers in the Crimea.

What length of period is in your opinion the best for a man to spend with the colours?—In the case of such an employment as the one I spoke of, the railway service, I would venture to say it is a matter of indifference whether a man has been three or six years with the colours. Provided he does not remain in the Army till he is a worn-out man, I think every month he spends under discipline is a preparation. Upon that point I think that if Mr. Findlay should attend from the London and North-Western Railway Company his opinion would be a valuable one. I should rather suggest to the Committee to interrogate him on this subject than to discuss it with me.

The Committee are anxious to ascertain whether the fact of a man being employed for a certain number of the best years of his life with the Army prejudices him much in civil life either as a skilled or unskilled labourer?—I think what I have said before answers that question. I think it depends upon the nature of the employment. I think that where you want technical skill, to have spent a period in the Army, which otherwise would have been passed in apprenticeship to the trade, is a disadvantage: where you do not want technical or manual dexterity, but discipline and character and general qualification, there I think that the period spent in the Army is not a disqualification and not an interruption to the future career.

And is it your opinion that a soldier joining the Reserve prejudices his life's career?—It certainly ought not to do so; an employer ought to feel that the call of the country is one which

Service in
the Reserve
should not
make it
difficult to
obtain
employ-
ment.

must be obeyed, and instead of being prejudiced against a man for having subjected himself to that responsibility, he ought to be inclined, I think, to give encouragement to men to join the Reserve by being the more ready to afford that class employment. I hope that if I were still a large employer that consideration would animate me; but as a matter of fact I believe that there are differences of view upon that subject. There are employers who take a large and patriotic view of the question, and there are others who would dislike to think that their business was liable to be interrupted and inconvenienced by men absenting themselves from their employer's service when they might be wanted, and who would therefore be prejudiced against men joining the Reserve; but it ought not to be so.

Do you think that this tie of being in the Reserve acts more prejudicially against the skilled or the unskilled labourer?—I do not think that makes a material difference; it depends upon whether the employment which the individual occupies is one for which a substitute could be readily found or not. In certain classes of skilled labour, though the labour is skilled, still it is easy to find a substitute; as, for instance, in the case of a carpenter, a bricklayer, or a mason; there are other carpenters, and other bricklayers, and other masons available. But when a man is put into a position requiring some special individual aptitude or knowledge, no doubt to take that individual away and to introduce a stranger who has to be initiated with some difficulty occasions inconvenience. I think one cannot answer that question generally.

Is it not an advantage to a man to be known to have served in the Army and to bear a good character with regard to being employed in civil life?—I should say so—a very great advantage; and if you had to take a new man into the signal department of the railway, I should certainly say that a man who had been in the Royal Engineers or the Artillery, or any branch of the service where the mind was habituated to exactitude and precision, would be very much more advantageous than a man without any training in habits of exactitude.

You alluded just now to circumstances of military life which made it unpleasant to particular men?—I was speaking of men of quiet domestic habits.

You spoke of the barrack life and the *ennui*, and so on; can you suggest any improvement of administration that might remove that objection?—No, I think it is inseparable from the nature of the service. If married men's quarters were to be largely multiplied it would involve great barrack difficulties.

And do you think that these objections to which you have referred extend to men in the Militia too?—A man in the Militia only serves for a short period. It is a different thing serving for three or four or five weeks in the year and serving continuously.

Then you do not think it affects the Militia men prejudicially?—I should say not.

You are speaking of the Militia, not of the Militia Reserve?—I refer to their service with the colours before they enter the Reserve.

At what age do you think a man can join the Army with least prejudice to his future prospects—before, or after 20?—The earlier the better I should say; but that answer must be governed by what I have said before, with reference to the nature of the future employment. I do not want to detain the Committee with speculations, but if the railways were the property of the State it is perfectly obvious that you might work the railway service in connection with the Army to the mutual advantage of both. It is perfectly obvious that a man disciplined in the Army is the better prepared for a large proportion of the employments in connection with the railway service; but as at present constituted, you cannot claim from the railways that they shall accept your men when they enter the Reserve.

(*Lord Napier.*) Heretofore the Reserves were liable to recall only on great emergencies; but if they are to be of use in the manner that the country requires, they must be liable to more frequent recall?—Certainly.

Questions
by Lord
Napier.

What effect do you think that more frequent liability to recall would have upon their prospects in civil life?—It would inevitably have a prejudicial effect in certain employments and with certain employers; and the only way in which I think the reservist can be compensated for the difficulty which he might perhaps experience in obtaining employment, subject to the contingency of his being more frequently summoned to the Reserve, is by increasing his pay as a reserve soldier.

Would you add 'or permit him, if he desired it, once recalled to the ranks to remain there'?—Yes, if the military authorities were prepared to grant that alternative. I can see no objection to it.

Beyond, of course, its being detrimental to the formation of a reserve?—Yes; that is a military question.

From your knowledge of the men who, according to your belief, could have been trained for a sufficient number of days to make them efficient for the Army, do you consider that they would have been prepared to enter the Reserve without some further inducement than that of pay for the extra days when they were being trained?—I am

of opinion that they would not have been deterred from entering into an engagement by the prospect of being occasionally called upon in time of war.

Do you think that that would have been the result of their judgments or the result of a temporary excitement at finding themselves getting skilled in military exercises and associated with soldiers?—I think it would have been a distinct advantage to them to add to their present pay as agricultural labourers so many shillings a year for attendance at drills at times which did not interfere with their other employments. Perhaps the full weight of the burden which they took upon themselves by engaging to serve with the colours upon the issue of the Queen's proclamation might not have been thoroughly considered by them, but still I feel confident that they would have responded to the call and would have accepted the engagement, and that they would have been a type of men that one would have been glad to add to the Army in case of a national emergency.

I would ask, with regard to the system of having a reserve amongst the people, do you consider that in Great Britain it involves a very great and pressing strain upon civil life to be recalled to the colours for actual war?—At a time of great activity in productive industry, to withdraw any proportion of your population engaged in that productive industry involves a certain strain upon the national resources; but in ordinary times I believe that there is a surplus of labour seeking employment, and that to withdraw a certain number of individuals from the labour market would not involve any great disturbance of the industrial arrangements of the nation. There are times, for instance, in railway construction, when great activity prevails, and it is a difficult thing to procure labour; and there are other times when there are large masses of men out of employment. At the present time, for instance, to call upon the country to part with its Reserve men from civil employ to join the Army would, I think, involve no disturbance at all, no national disturbance, at least.

My question has more reference to the domestic relations of the citizen and his connection with his friends?—A man who has settled down in life cannot possibly go into the field without involving himself in very considerable inconvenience; but that is one of the inevitable incidents of war.

(*Sir J. L. A. Simmons.*) As drills alone will not form soldiers, but it is necessary to give them the cohesion due to their being disciplined in masses, do you think that your Volunteers whom you were speaking of would consent to enrol themselves with the understanding that they might be called out for a month every year, or every other

year, for the purpose of being drilled in masses?—I am quite sure that the class of men I contemplate would be glad to go out for a period for the purpose of military exercise, assuming of course that they were paid for doing so. I am encouraged in this belief by the fact that there are every year some 1,800 men assembled at Shoeburyness. They come from all parts of the country, from Scotland, from the furthest north, and the furthest west, and they pass a fortnight under canvas at Shoeburyness, busily engaged the whole time in drills and exercises; and if such an effort as that can be made by Volunteers, whose expenses are very imperfectly met by contributions from the National Exchequer, I feel quite sure that you might muster the Volunteers by brigades and in larger numbers at some places where no difficulty of access would present itself, and that they would be very glad to vary the monotony (for after all there is a great monotony) in an agricultural labourer's life by an occasional period of service of that kind.

I should also like to ask you if you could give us your opinion upon this point: as it will always be necessary to maintain a certain standing army for service in the colonies and in India, and also as a nucleus even if a Volunteer system of Reserve should be established, and as it is found that the present conditions which are published to the labour market for the purpose of drawing recruits for the most part only yield lads and immature men and the waifs and strays of society, could you suggest any improvement in those conditions, either by simplifying the contract or in any other way which would tend to produce what we require, mature men above twenty years of age capable of enduring the fatigues of war?—I cannot make any suggestion with that view. The experience of the Committee will tell them better than I can tell them what was the condition of the Army under the old terms of service, and whether or not when the period of service was longer you then secured a sufficient proportion of mature men in your Army to satisfy all the requirements of military life. I cannot help thinking that if you want to get these mature men you must train them yourself; that you must be content to take the recruit very much as he presents himself now, and you must make him a better man, and bring him up to the type and standard which you desire in the ranks of the Army. In short, it points to this, that the period of service must be extended, and I would encourage the better men to remain with the colours or in the Reserve whose characters have been established by actual service and whose efficiency you have tested by actual service. I would rather encourage those men to remain, by giving them an improved position for their

second or third term of service, than raise the pay all round *ab initio*, making it quite a speculation whether after all you have got the better man you desire to get. I would test him as to quality during his first term of service, paying him at his present scale of pay; and then secure him for a longer period by granting an improved position on re-engagement, endeavouring as far as may be to make the improved pay a payment for results.

The difficulty of that would appear to be that, as the Army must be of a certain strength of efficient soldiers, you should have to keep attached to it a large number of immature lads who were not fit for the duty of soldiers and who would cost a very large sum of money?—I do not see how you are to evade that. You require a longer service, during a part of which you know that the man will be preparing himself for more effective service in a later stage. I do not see how you are to avoid the responsibility of military apprenticeship, if I may use the term; you cannot expect to get matured men fully trained in civil employ to come into the Army unless they are offered such terms and conditions as I am sure the legislature would hesitate to sanction.

(*Chairman.*) Do you find that there is any difficulty in getting efficient labourers now?—No, none at all.

And do they stay with their employer?—There is no difficulty at all in that respect. The recruiting men for civil employment and maintaining discipline among them when you have engaged their services is really very much a question of the general condition of trade throughout the country at the time; it depends upon the relations between the demand for labour and the supply of it. When the demand for labour is very great, and the supply of the labour is moderate or insufficient in comparison with the demand, then the terms exacted by labour for its service of course becomes dearer; and that dearness expresses itself in various ways, either you have to pay more by the day or by the piece, or you have to submit to regulations in restriction of the native energy of men; in fact, you have to surrender to a certain extent to the Trades Unions. But when, on the other hand, the conditions are reversed, and the supply of labour is great in proportion to the demand, when in fact there are two men seeking employment for every position which is vacant, then docility and discipline prevail.

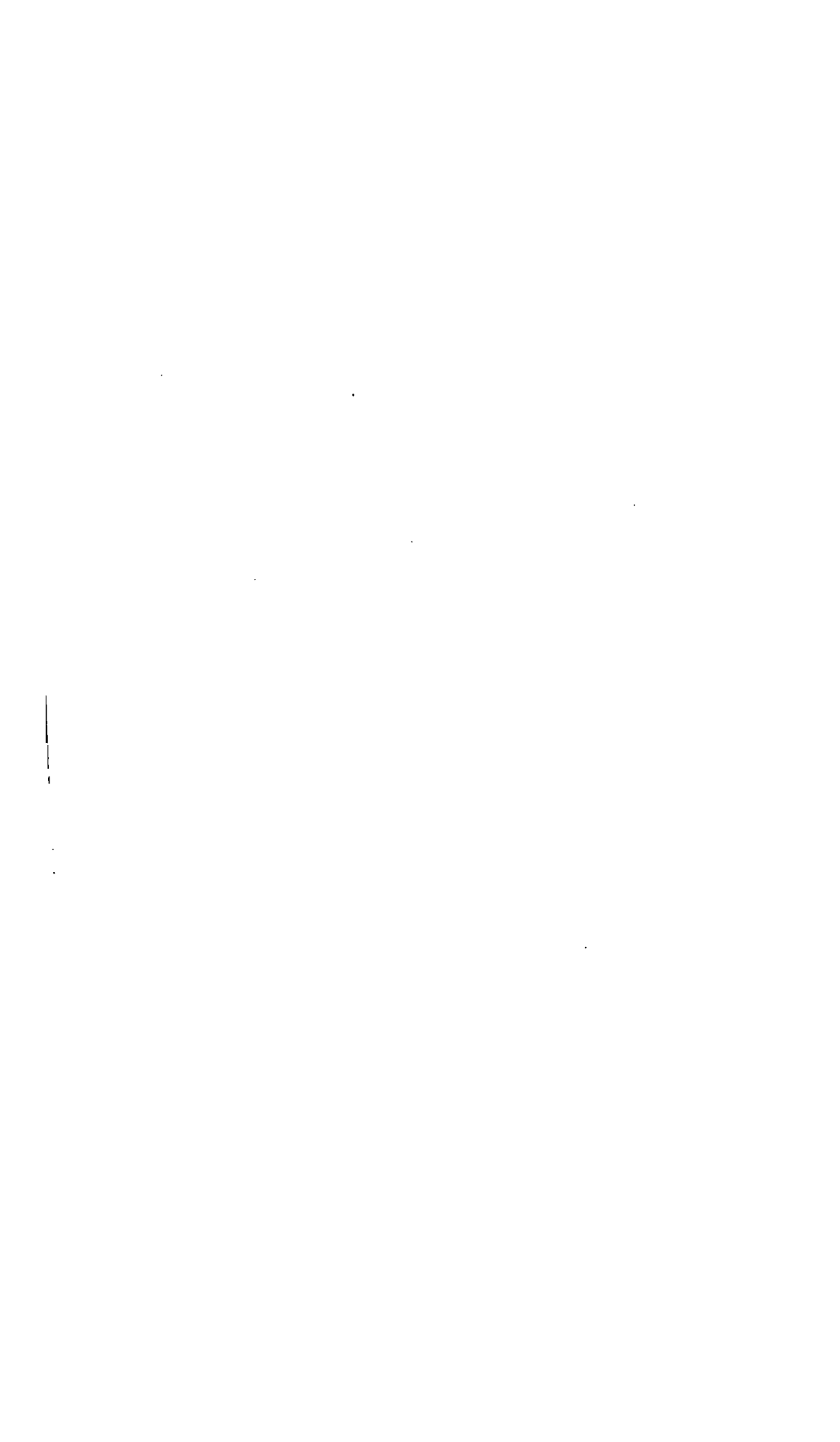
(*Sir J. L. A. Simmons to Mr. Harrison.*) What is the wage at the present time of the ordinary labourer of the country?—About 3s. 6d. to 4s. for the ordinary type of navvy, but piecework runs it up to 4s. 6d. and even 5s. 6d.

(*Mr. Brassey.*) The fluctuations, it is obvious, are very great, depending upon those general conditions of demand and supply. Of course when comparing the position of a soldier with that of a man engaged in civil life, the fact that in the case of the Army the conditions are permanent and irrespective of these commercial fluctuations ought to be borne in mind in estimating the relative pecuniary advantages of civil and military service.

(*Lord Napier.*) I would venture to remind you of one particular condition in the case of the soldier, which does not hold good in civil life, which is, that we do not want the soldier to have any more money in his pocket; you would pay him according to results, but you do not want immediately to put any more money in his pocket; he has food and clothes, and sufficient for his immediate wants, anything more at the moment is a temptation, but you would like to pay him for results in the shape of deferred pay or pension?—Yes. The difficulty which your lordship has alluded to, namely, that to put any increased sum of money into a man's pocket constitutes a temptation to irregularity, has presented itself in the railway service, and Mr. Harrison reminds me of this, that many years ago, when from the state of the labour market very exceptionally high wages had to be given to the navvies, in order to avoid the disastrous consequences of paying an excessive lump sum at one given moment into the hands of the navvy, the pay was broken up into daily amounts and he was paid so much every evening, in order that he might not be paid an undue amount at one time.

And was the result advantageous?—Yes.

(The witnesses withdrew.)



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